ARS. 50. APP. 86

MICROFILMING OF RECORDS RELATING TO KARNATAKA AT CHITTOR COLLECTORATE

CAMP: CHITTOR (AP)
16/4/1991

ARS. 50. APP. 86

MICROFILMING OF RECORDS RELATING TO KARNATAKA AT CHITTOR COLLECTORATE

CAMP: CHITTOR (AP)
16/4/1991

KARNATAKA

STATE ARCHIVES

START

(ROLL No:- ①)

CAMP: CHITTOR (AP)

16/4/91.

KARNATAKA
STATE ARCHIVES

START

(ROLL No:- ①)

CAMP: CHITTOR (AP)
16/4/91.

KARNATAKA
STATE ARCHIVES

START

(ROLL No:- ①)

CAMP: CHITTOR (AP)
16/4/81.

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರಾಗಾರ ಇಲಾಖೆ

ಸಂಖ್ಯೆ:ವಇಆಪಾ 50 ಎಸಿಪಿ 86

ನಿರ್ದೇಶಕರ ಕಛೇರಿ,
ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರಾಗಾರ,
ಕೊಠಡಿ ಸಂಖ್ಯೆ:11, ನೆಲ ಮಹಡಿ,
ವಿಧಾನ ಸೌಧ, ಬೆಂಗಳೂರು.
ದಿನಾಂಕ:27.3.1991.

ಕಛೇರಿ ಜ್ಞಾಪನ ಪತ್ರ

ವಿಷಯ:ಬಿಮ್ಸ್‌ರು ಜಿಲ್ಲಾ ಕಲೆಕ್ಟರ ಕಛೇರಿಯಲ್ಲಿ ರೂಢ ಐತಿಹಾಸಿಕ ದಾಖಲೆಗಳ ಸಂಗ್ರಹ ಹಾಗೂ ನೂತನೀಕರಣ ಮಾಡಲು ಇಲಾಖಾ ವಾಹನ ದಲ್ಲಿ ಪ್ರವಾಸ ಕೈಗೊಳ್ಳುವ ಬಗ್ಗೆ.
ಉಲ್ಲೇಖ:ಪತ್ರ ಸಂಖ್ಯೆ:ಪಾಪ್ರಂಯು 6 ರಾಪಸ 90
ದಿನಾಂಕ:20.2.1991.

ಅಂಶ

ಮೇಲ್ಕಂಡ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಒಂದು ಹಾರ ಮೂರ್ದೆ ತಿಂಗಳಲ್ಲಿ ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರಾಗಾರ ನಿರ್ದೇಶಕರುಗಳಿಗೆ ಈ ಕೆಳಕಂಡ ಅಧಿಕಾರಿಗಳೂ ಹಾಗೂ ನೌಕರರನ್ನು ಬಿಮ್ಸ್‌ರು ಜಿಲ್ಲಾ ಕಲೆಕ್ಟರ ಕಛೇರಿಯಲ್ಲಿರುವ ಐತಿಹಾಸಿಕ ದಾಖಲೆಗಳ ಪೂರ್ವಭಾವಿ ಪರಿವೀಕ್ಷಣೆ ಹಾಗೂ ನೂತನೀಕರಣ ಕಾರ್ಯಕ್ಕೆ ಕೈಗೊಳ್ಳಲು ಇಲಾಖಾ ವಾಹನ ಸಂಖ್ಯೆ:ಸಿ.ಕೆ.ಡಿ.:346ರಲ್ಲಿ ಪ್ರವಾಸ ಕೈಗೊಳ್ಳಲು ನಿಯೋಜಿಸಲಾಗಿದೆ.

ಅಧಿಕಾರಿಗಳು	ಮುಂಗಡ ಹಣ
1.ಶ್ರೀ ಶ್ರೀನಿವಾಸ ಪ್ರಸಾದ್, ಪಾಂಶ್ರಿಕಾಧಿಕಾರಿಗಳು	ರೂ.250-00
2.ಶ್ರೀ ಬಿ.ಹನುಮಂತರಾಯಪ್ಪ, ಸದಪತ್ರಪಾಲಕರು	ರೂ.250-00
3.ಶ್ರೀ ಉದಯಶಂಕರ್, ಪಾಂಶ್ರಿಕ ಸಹಾಯಕರು	ರೂ.200-00
4.ಶ್ರೀ ರವಿಕುಮಾರ್, ವಾಹನ ಚಾಲಕರು	ರೂ.150-00

ಈ ಪ್ರವಾಸಕ್ಕೆ ಪಡೆಬಹುದಾದ ಪ್ರವಾಸ ಭತ್ಯೆ ಹಾಗೂ ದಿನ ಭತ್ಯೆಗಳನ್ನು ನಿಯಮಾನುಸಾರ ಮಂಜೂರು ಮಾಡಲಾಗಿದೆ. ಹಾಗೂ ವಾಹನ ಖರ್ಚಿಗಾಗಿ ಹಾಗೂ ನೂತನೀಕರಣಕ್ಕಾಗಿ ಮುಂಗಡ ಹಣ ರೂ.3000-00 ಗಳನ್ನು ಮಂಜೂರು ಮಾಡಲಾಗಿದೆ.

ಮೇಲ್ಕಂಡ ವೆಚ್ಚವನ್ನು ಲೆಕ್ಕ ಶೀರ್ಷಿಕೆ " 2205 ಕಲೆ ಮತ್ತು ಸಾಂಸ್ಕೃತಿ, 104 — ಪತ್ರಾಗಾರ 10 — ಪತ್ರಾಗಾರ ಘಟಕ 1990-91" (ಯೋಜನೆ)ನೇ ಸಾಲಿನ ಲಭ್ಯವಿರುವವರೆಗೆ ಭರಿಸಲಾಗುವುದು.

27/3

(ಡಾ.ಆರ್.ಮುನಿಸ್ವಾಮಿ)
ನಿರ್ದೇಶಕರು.

ಪ್ರತಿಗಳು:—
1.ಸಂಬಂಧಪಟ್ಟ ಅಧಿಕಾರಿ ಹಾಗೂ ನೌಕರರಿಗೆ
2.ವಾಹನ ಚಾಲಕರಿಗೆ
3.ಲೆಕ್ಕ ಮಹಾಪಾಲಕರು, ಕರ್ನಾಟಕ, ಬೆಂಗಳೂರು
4.ಖಜಾನೆ ಅಧಿಕಾರಿಗಳು, ರಾಜ್ಯ ಹುಜೂರು ಖಜಾನೆ, ಬೆಂಗಳೂರು
5.ಲೆಕ್ಕ ಶಾಖೆ(2) ಪ್ರತಿಗಳು
6.ನಿರ್ದೇಶಕರ ಆಪ್ತ ಸಹಾಯಕರು
7.ಉಪ ನಿರ್ದೇಶಕರು
8.ಕಛೇರಿ ಹಾಗೂ ದಿನ ಪ್ರತಿಗಳು.

ಎಲೆನಿ:27391

GOVERNMENT OF KARNATAKA
KARNATAKA STATE ARCHIVES DEPARTMENT

No.ARS 50 APP 86 Dated:9.4.1991.

To:

The District Collector,
Chittur District,
Chittur. Andhra Pradesh.

Sir,

Sub:Survey and Microfilm of Historical Records relating to the Karnataka State.

.....

With reference to the subject cited above, I am to state that the following officers and officials of this department have been deputed to your district Collectorate office to prepare the list of records and Microfilm, with effect from 15.4.1991 to 20.4.1991.

1. Sri.Srinivasa Prasad, Technical Officer,
2. Sri.B.Hanumantharayappa, Assistant Archivist
3. Sri.Udaya Shankar, Technical Assistant,
4. Sri.Ravikumar, Driver

I therefore request you kindly to extend all possible co-operation.

Yours faithfully,
Sd/-
(Dr.R.MUNISWAMY)
Director of Archives.

/Copy/

Lv:9491.

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರಾಗಾರ ಇಲಾಖೆ

ಸಂಖ್ಯೆ:ಎಆರ್‌ವಿಸಿ 50 ಎಪಿಪಿ 86

ನಿರ್ದೇಶಕರ ಕಛೇರಿ,
ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರಾಗಾರ,
ಕೊಠಡಿ ಸಂಖ್ಯೆ:11, ನೆಲಮಹಡಿ,
ವಿಧಾನ ಸೌಧ, ಬೆಂಗಳೂರು.
ದಿನಾಂಕ:11.4.1991.

ಕಛೇರಿ ಆದೇಶ

ವಿಷಯ:ಚಿತ್ರದುರ್ಗ ಜಿಲ್ಲಾ ಕಲೆಕ್ಟರರ ಕಛೇರಿಯಲ್ಲಿರುವ ಐತಿಹಾಸಿಕ ದಾಖಲೆಗಳ ಸಂಗ್ರಹ ಹಾಗೂ ಸೂಕ್ಷ್ಮ ಚಿತ್ರೀಕರಣ ಮಾಡಲು ಇಲಾಖಾ ವಾಹನದಲ್ಲಿ ಪ್ರವಾಸ ಕೈಗೊಳ್ಳುವ ಬಗ್ಗೆ.

ಉಲ್ಲೇಖ:ಪತ್ರ ಸಂಖ್ಯೆ:ಎಆರ್‌ವಿಸಿ 50 ಎಪಿಪಿ 86 ದಿನಾಂಕ: 27.3.1991.

೦೦೦

ಮೇಲ್ಕಂಡ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಈ ಕೆಳಕಂಡ ಅಧಿಕಾರಿಗಳ ಹಾಗೂ ನೌಕರರನ್ನು ದಿನಾಂಕ:15.4.91 ರಿಂದ 20.4.91ರವರೆಗೆ 6 ದಿನಗಳ ಕಾಲ ಚಿತ್ರದುರ್ಗ ಜಿಲ್ಲಾ ಕಲೆಕ್ಟರರವರ ಕಛೇರಿಯಲ್ಲಿರುವ ದಾಖಲೆಗಳ ಸೂಕ್ಷ್ಮಚಿತ್ರೀಕರಣ ಕಾರ್ಯವು ಕೈಗೊಳ್ಳಲು ಸಲುವಾಗಿ ಇಲಾಖಾ ವಾಹನ ಸಂಖ್ಯೆ:ಕೆಸಿ-ಕೆ-ಜಿ-346 ರಲ್ಲಿ ಪ್ರವಾಸ ಕೈಗೊಳ್ಳಲು ನಿರ್ದೇಶಿಸಲಾಗಿದೆ.

1. ಡಾ.ಆರ್.ಮುನಿಸ್ವಾಮಿ, ನಿರ್ದೇಶಕರು — ದಿನಾಂಕ:15.4.91 ರಿಂದ 16.4.91 ರವರೆಗೆ

1. ಶ್ರೀ ಶ್ರೀನಿವಾಸ ಪ್ರಸಾದ್, ತಾಂತ್ರಿಕ ಅಧಿಕಾರಿಗಳು
2. ಶ್ರೀ ಬಿ.ಹನುಮಂತರಾಯಪ್ಪ, ಸಹಪತ್ರಪಾಲಕರು
3. ಶ್ರೀ ಗುಡಾಯಿ ಶಿಂಕರ್, ತಾಂತ್ರಿಕ ಸಹಾಯಕರು
4. ಶ್ರೀ ರಮೇಶ್, ವಾಹನ ಚಾಲಕರು

ದಿನಾಂಕ:15.4.91 ರಿಂದ 20.4.91ರವರೆಗೆ.

ಕರಡು ನಿರ್ದೇಶಕರಿಂದ ಅನುಮೋದಿಸಲ್ಪಟ್ಟಿದೆ.

ನಿರ್ದೇಶಕರ ಪರವಾಗಿ.
11/4/91

12/4/91

ಎಲೆಬಿ:11491

GOVERNMENT OF KARNATAKA
KARNATAKA STATE ARCHIVES DEPARTMENT

No.ARS 50 APP 86 Dated:9.4.1991.

To:

The District Collector,
Chittur District,
Chittur, Andhra Pradesh.

Sir,

Sub:Survey and Microfilm of Historical Records relating to the Karnataka State.

.....

With reference to the subject cited above, I am to state that the following officers and officials of this department have been deputed to your district Collectorate office to prepare the list of records and Microfilm, with effect from 15.4.1991 to 20.4.1991.

1. Sri.Srinivasa Prasad, Technical Officer,
2. Sri.B.Hanumantharayappa, Assistant Archivist
3. Sri.Udaya Shankar, Technical Assistant,
4. Sri.Ravikumar, Driver

I therefore request you kindly to extend all possible co-operation.

Yours faithfully,
Sd/-
(Dr.R.MUNISWAMY)
Director of Archives.

/Copy/

Lv:9491.

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರಾಗಾರ ಇಲಾಖೆ

ಸಂಖ್ಯೆ:ಎಆರ್ಎನ 50 ಎಪಿಪಿ 86

ನಿರ್ದೇಶಕರ ಕಛೇರಿ,
ಕರ್ನಾಟಕ ರಾಜ್ಯ ಪತ್ರಾಗಾರ,
ಕೊಠಡಿ ಸಂಖ್ಯೆ:11, ನೆಲಮಹಡಿ,
ವಿಧಾನ ಸೌಧ, ಬೆಂಗಳೂರು.
ದಿನಾಂಕ:11.4.1991.

ಕಛೇರಿ ಆದೇಶ

ವಿಷಯ:ಚಿತ್ರದುರ್ಗ ಜಿಲ್ಲಾ ಕಲೆಕ್ಟರ ಕಛೇರಿಯಲ್ಲಿರುವ ಐತಿಹಾಸಿಕ ದಾಖಲೆಗಳ ಸಂಗ್ರಹ ಹಾಗೂ ಸೂಕ್ಷ್ಮ ಚಿತ್ರೀಕರಣ ಮಾಡಲು ಇಲಾಖಾ ವಾಹನದಲ್ಲಿ ಪ್ರವಾಸ ಕೈಗೊಳ್ಳುವ ಬಗ್ಗೆ.

ಉಲ್ಲೇಖ:ಪತ್ರ ಸಂಖ್ಯೆ:ಎಆರ್ಎನ 50 ಎಪಿಪಿ 86 ದಿನಾಂಕ: 27.3.1991.

೦೦೦

ಮೇಲ್ಕಂಡ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಈ ಕೆಳಕಂಡ ಅಧಿಕಾರಿಗಳ ಹಾಗೂ ನೌಕರರನ್ನು ದಿನಾಂಕ:15.4.91 ರಿಂದ 20.4.91ರವರೆಗೆ 6 ದಿನಗಳ ಕಾಲ ಚಿತ್ರದುರ್ಗ ಜಿಲ್ಲಾ ಕಲೆಕ್ಟರರವರ ಕಛೇರಿಯಲ್ಲಿರುವ ದಾಖಲೆಗಳ ಸೂಕ್ಷ್ಮಚಿತ್ರೀಕರಣ ಕಾರ್ಯವು ಕೈಗೊಳ್ಳಲು ಸಲುವಾಗಿ ಇಲಾಖಾ ವಾಹನ ಸಂಖ್ಯೆ:ಸಿ.ಕೆ.ಡಿ.346 ರಲ್ಲಿ ಪ್ರವಾಸ ಕೈಗೊಳ್ಳಲು ನಿಯೋಜಿಸಲಾಗಿದೆ.

1. ಡಾ.ಆರ್.ಮುನಿಸ್ವಾಮಿ, ನಿರ್ದೇಶಕರು — ದಿನಾಂಕ:15.4.91 ರಿಂದ 16.4.91 ರವರೆಗೆ

1. ಶ್ರೀ ಶ್ರೀನಿವಾಸ ಪ್ರಸಾದ್, ತಾಂತ್ರಿಕ ಅಧಿಕಾರಿಗಳು
2. ಶ್ರೀ ಬಿ.ಹನುಮಂತರಾಯಪ್ಪ, ಸಹಪತ್ರಪಾಲಕರು
3. ಶ್ರೀ ಗುಡಾಯಿ ಶಂಕರ್, ತಾಂತ್ರಿಕ ಸಹಾಯಕರು
4. ಶ್ರೀ ರಮೇಶ್, ವಾಹನ ಚಾಲಕರು

ದಿನಾಂಕ:15.4.91 ರಿಂದ 20.4.91ರವರೆಗೆ.

ಕರಡು ನಿರ್ದೇಶಕರಿಂದ ಅನುಮೋದಿಸಲ್ಪಟ್ಟಿದೆ.

S.R.L.

ನಿರ್ದೇಶಕರ ಪರವಾಗಿ.
ಕೆ/11/4/91

12/4/91

ಎಲ್ಬಿ:11491

TELEPHONE : 24467

GOVERNMENT OF KARNATAKA

NO. ARS/ 50 | Spp | 86

OFFICE OF THE DIRECTOR
KARNATAKA STATE ARCHIVES
ROOM NO. 11, GROUND FLOOR
VIDHANA SOUDHA, BANGALORE-1

DATED 16-4-1991

FROM

THE DIRECTOR
KARNATAKA STATE ARCHIVES
BANGALORE

TO

Camp: At Collectorate office
Record Room. Chittoor.
Chittoor Dist.

Noti:-

Sub: Microfilming of Records at chittoor collectorate - bearing on Karnataka.

Ref: File No. ARS | 50 | Spp | 86.

The collector of chittoor Dist has pleased to grant Permission to the Karnataka State Archives, Bangalore for Microfilming records of Historical value pertaining to Karnataka.

The Survey was undertaken by Sri. M.V. Krishnappa, AA, Sri. Hanumanthaya, AA, Sri. Ramachandra Bhat Senior Assistant, Sri. Usha Suresh, DO. in two batches. The Documents are of Selective in nature culled out from different Sources.

The microfilming work is headed by Sri. Srinivas Prasad, Technical Officer assisted by Sri. Nagaraja Shenoy. The Selected documents have been taken up for microfilming at the Chittoor Collectorate office from 16th onwards for five days with the assistance of Sri. Hanumantha Rajappa. Assistant Director.

16/4/91

(D.R. Muniswamy)
Director.

TELEPHONE : 24467

GOVERNMENT OF KARNATAKA

NO. ARS/ 50 | Opp | 86

OFFICE OF THE DIRECTOR
KARNATAKA STATE ARCHIVES
ROOM NO. 11, GROUND FLOOR
VIDHANA SOUDHA, BANGALORE-1

DATED . 16-4-1991

FROM

THE DIRECTOR
KARNATAKA STATE ARCHIVES
BANGALORE

TO

Camp: At. Collectorate office
Record Room. Chittoor.
Chittoor Dist.

Noti:-

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The Survey was undertaken by Sri. M.V. Krishnappa, AA, Sri. Hanumanthaya, A.A, Sri. Ranchivaradaiah Branch Officer, Sri. Usha Suresh, DO. in two batches. The documents are of Selective in nature collected from different sources.

The microfilming work is headed by Sri. Srinivas Prasad, Technical officer assisted by Sri. Nagaraja Shanbhag. The selected documents have been taken up for microfilming at the Chittoor collectorate office from 16th onwards for five days with the assistance of Sri. Hanumantha rayappa. Assistant Branch.

16/4/91

(V.R. Muniswamy)
Director.

139/c

THE LIST OF RECORDS SELECTED AT CHITTOOR COLLECTORATE OFFICE, CHITTOR (AP)

1.	Report on the Mysore Dasara Industrial and Agricultural Exhibition 1908	(Page 1 to 52 & 1 to 18)
2.	British Empire Exhibition 1924 (Catalogue)	(P.250 to 261)
3.	Report on the Socio-Economic condition of the Aboriginal Tribes of the province of Madras 1948 (South Canara)	(P.108 to 116)
4.	The Madras Industrial and Art Exhibition 1903	(P. 1 to 159)
5.	Annual Report of the Archaeological Southern Circle Madras 1912-13	(P. 1 to 75)
6.	Manual of the Administration of the Madras presidency 1885 Vol.II	(P.1,2, 58 to 65 177, 178,277, 187 to 193 380, 381)
7.	General Report of the Board of Revenue to the Honorable Sri.T.Munro K.C.B. Governor in Council sent home to the Court of Directors 3rd Jan. 1882 to 2nd January 1823 (1879)	(P.386 to 441 & 1065 to 1138, 55 to 70)
8.	Manual of Administration of the Madras Presidency 1885	(P.365 to 420)
9.	Charters Relating to the East India Company from 1600 to 1761	(P. 1 to 310)
10.	Report on the provinces of Malabar and South Canara 1916	(P. 15 to 22)
11.	Proceedings of the Conference of Collectors 1917	(P. 1)
12.	Manual of the Administration of the Madras presidency 1885	(P. 58 to 65 277, 278)

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139/cs

THE LIST OF RECORDS SELECTED AT CHITTOOR COLLECTORATE OFFICE? CHITTOR (AP)

1.	Report on the Mysore Dasara Industrial and Agricultural Exhibition 1908	(Page 1 to 52 & 1 to 18)
2.	British Empire Exhibition 1924 (Catalogue)	(P.250 to 261)
3.	Report on the Socio-Economic condition of the Aboriginal Tribes of the province of Madras 1948 (South Canara)	(P.108 to 116)
4.	The Madras Industrial and Art Exhibition 1903	(P. 1 to 159)
5.	Annual Report of the Archaeological Southern Circle Madras 1912-13	(P. 1 to 75)
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9.	Charters Relating to the East India Company from 1600 to 1761	(P. 1 to 310)
10.	Report on the provinces of Malabar and South Canara 1916	(P. 15 to 22)
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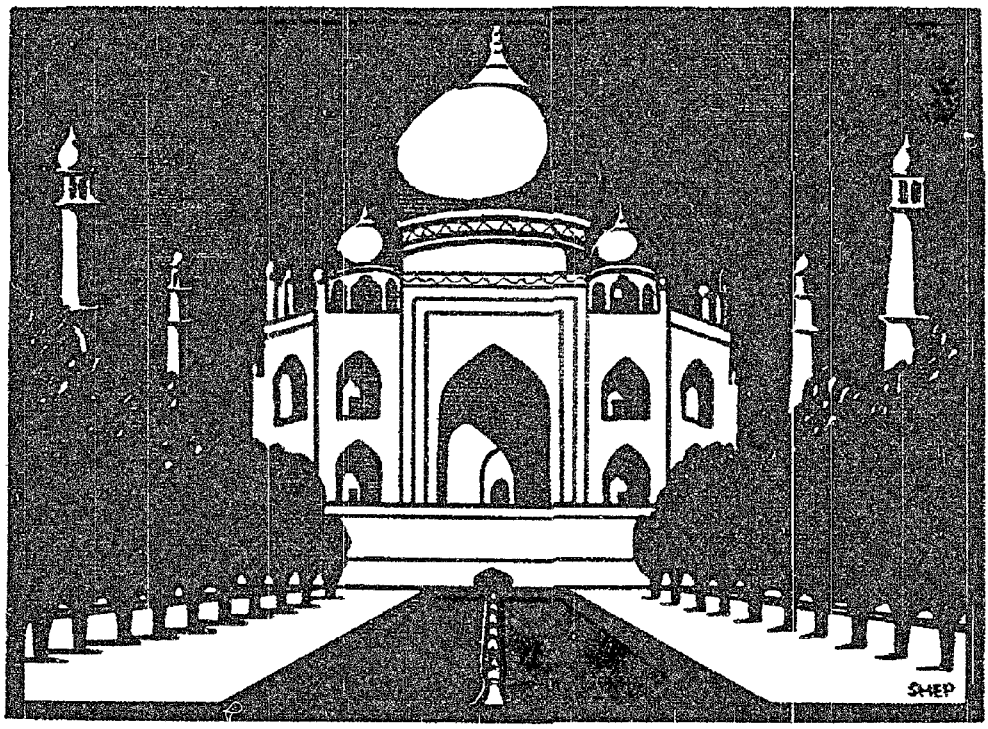

BRITISH EMPIRE EXHIBITION 1924

CATALOGUE

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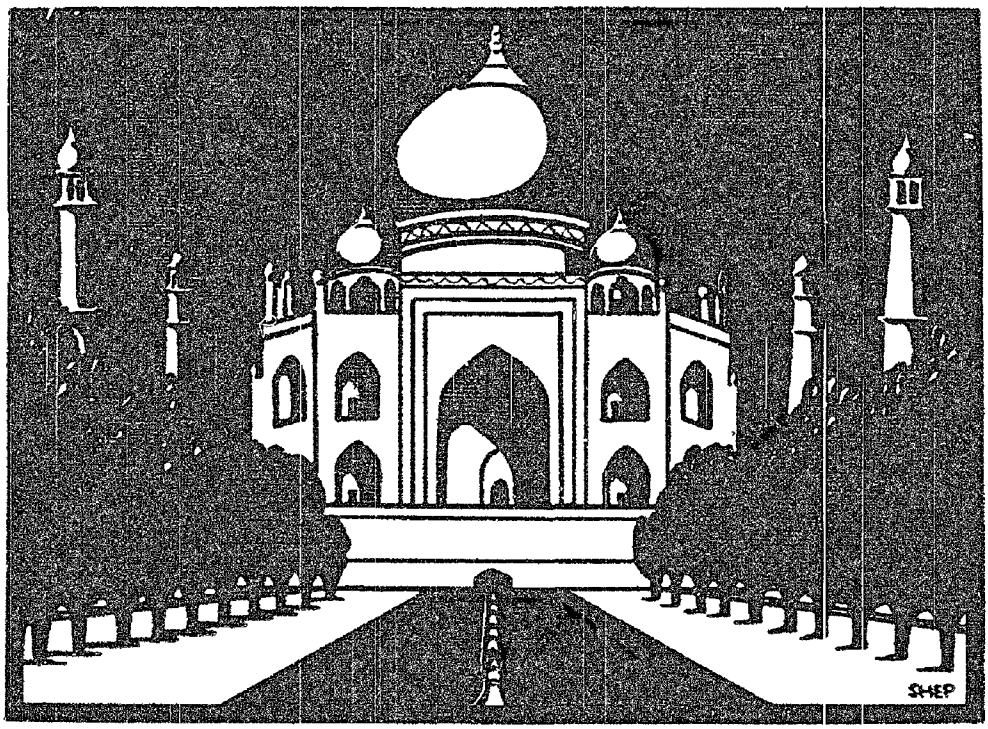

BRITISH EMPIRE EXHIBITION 1924

CATALOGUE

1/=

MYSORE

Area : 29,469 square miles ; population, nearly 6 millions.

Resources.

THE principal resources of the State in which there is extensive foreign trade are gold, chrome and manganese among minerals, oilseeds, silk, cotton, sandalwood, hides and skins, coffee, timber and several forest products.

2. Minerals

Among minerals besides gold, the most important are chrome and manganese in the supply of which Mysore takes a leading part throughout the world. Chrome is extracted chiefly from mines in the Tumkur and Hassan Districts, and manganese in the Shimoga District, but these minerals are to be found elsewhere in the State. Iron ore of very good quality has been discovered in various parts of the State, but the best specimens are found in the Bababudan Hills. A factory has recently been started at Bhadravati for the manufacture annually, from 15,000 to 20,000 tons, of pig iron with charcoal produced by the destructive distillation of wood. The acetate of lime and the wood alcohol manufactured are of good quality, for which there is a steady and growing demand from foreign markets. There are good deposits of kaolin, magnesite and asbestos, in which new industries are now being developed. Sand suitable for glass manufacture is also available. There are many varieties of building stones, chiefly granites, which range from the ordinary to the most exquisite types. The Palace at Mysore is built entirely from Mysore stones and gives an idea of the great variety and wealth of such material in the State. Difficulties of transport stand in the way of any large trade being built up in them. The State is also rich in ochres and siennas, and efforts are being made to develop an industry in paints and distempers. The Geological Department in Mysore has made a comprehensive survey of the mineral resources in the State, and published much valuable information on the subject. A complete collection of minerals of commercial value has been made and a map showing the distribution has been printed.

3. Textile Industries.

The textile industries afford, next to agriculture, employment to the largest number of people. In regard to textile industries, the State commands an unusually favourably position. Silk, cotton and wool, are all produced in abundance within the State. The annual production of raw silk is estimated at one million pounds, valued at one and a half crores of rupees. The quantity of cotton produced annually is about 50,000 bales of 400 lbs. each, a large proportion of which yields a higher staple than the bulk of Indian cotton. Sheep-breeding is carried on on a large scale in Mysore, and it is also the centre of the trade in sheep skins in Southern India. Wool is thus locally available. The Mysore State has therefore provided occupation from time immemorial to a large number of weavers, who have attained an extraordinary measure of skill in the weaving of finer counts and costly silk fabrics. As the bulk of the weavers in Mysore are engaged in the manufacture either of coarse or high counts they have been able to withstand the competition of the mills, the number of which has been increasing steadily in recent years. The total value of the cotton goods produced in the State by the handloom weavers is estimated at about one and one-third million pounds, of which woollen and silk goods respectively account for about £120,000 and £500,000. Carpet making has been an important industry in Mysore from time immemorial, and some of the specimens produced are of extraordinary beauty and finish.

SILK.

Mulberry can be grown in nearly all parts of the State, and the climate is also suitable for the silk worm, which is of a Poly-voltine species. The silk worm rearers are able to take about six to eight crops per annum. The actual area under mulberry cultivation is about 50,000 acres, but the scope for expansion is almost unlimited. The cocoons are now reeled in cottages with the help of very primitive appliances. Considerable attention has been devoted by the Government to the improvement of the silk industry by providing facilities for the supply of disease-free seed, by carrying on experiments on a large scale for the improvement of the silk worm, and by the introduction of up-to-date methods of reeling. The silk reeled is utilised either locally or in the adjacent parts of the Madras Presidency. When reeled in modern filatures, its quality is found to be equal to that of the best Canton silk, and it is expected that Mysore will shortly be able to take an important place among the suppliers of European markets. Silk waste is also exported in large quantities to Italy, where it is converted into spun silk.

OTHER FIBRES.

Sisal hemp thrives in the State, and plantations of this fibre are being started. Sun hemp is grown as a green manure and used in making bags and sacks. There are many forest fibres of commercial value which are not utilised on account of the difficulties of extraction. The potentialities of the State in yielding valuable fibres have been hardly touched.

4. Oilseeds.

Among other commercial crops produced in the State, the most important are oilseeds, coffee, sugar cane and tobacco. Except linseed, which is grown in small patches, all other oilseeds produced in India, such as ground nut, gingelly, safflower, castor, rapeseed, etc., are grown in abundance in the State. Oilseeds are being raised as a subsidiary crop. Correct statistics of actual area under cultivation are not available, but the total quantity of oilseeds produced annually is estimated at about 80,000 tons. About 5 to 10 per cent. of the oilseeds produced locally is used in the extraction of oil in the village oil mills, known as ghanas, but oil crushing machinery of the Anderson Oil Expeller type has been largely introduced in the State, which has given considerable impetus to the export of oil and oilcake. Cocoanut is also produced on a large scale, the soil in all parts of the State, except in regions of heavy rainfall, being well suited to it, but it is only grown in small blocks intermixed with other crops. The total value of cocoanuts annually produced is estimated at over £300,000. With a view to stimulating the cultivation of this crop, large areas of land have been made available by Government from lands containing date palms and those reserved for the grazing of Government cattle. Very little of the cocoanut is used locally for the extraction of oil, the bulk of it being consumed for edible purposes, for which it has acquired a high reputation, and is much in demand in the markets all over India. There are many trees, such as Hongey, Ippe, Dhupa, which yield valuable oils, and there are others of which the oil is not extracted on account of the difficulties in deoderising. These latter resources are sufficiently extensive to form the nucleus of important industries in the hands of competent enterprise.

Essential Oils.

The State is also rich in raw materials such as sandalwood, cardamom, cinnamon leaf, vetiver, rosha and lemongrass, from which valuable essential oils can be prepared, and there are three large factories, two of which, owned by Government, are engaged in the distillation of sandalwood oil, and the other a private factory for making essential oils from cloves, cinnamon leaf,

patchouli, etc. Sandalwood is a monopoly of the State, which commands nearly three-fourths of the entire production in the whole world. The annual output of sandalwood is estimated at 2,000 tons, and the value of the oil extracted ranges from £125,000 to £200,000 annually, according to the quantity put on the market.

ALLIED INDUSTRIES.

Industries with oils as the basis are in an infant state. There is a Government factory for the manufacture of toilet and washing soaps, and several small private factories which confine themselves to the manufacture of washing soaps, and a small factory for the manufacture of candles has been recently established.

5. Jaggery and Sugar Manufacture.

The total area under sugar cane cultivation is about 50,000 acres. Very little sugar is produced, sugar cane being converted mostly into jaggery. The climate is ideally suited for growing sugar cane. The State Agricultural Department has done a great deal in the improvement of sugar cane cultivation by introducing new varieties of cane and improved methods of cultivation, and by popularising the use of oil cake and chemical manures. Sugar cane is now grown in very small blocks by individual peasants, and there is great difficulty, owing to this cause, in organising the industry on a factory basis. New reservoirs are being constructed, where it is intended to provide suitable facilities for the establishment of sugar plantations.

6. Coffee and Cardamom.

Coffee is one of the most important commercial crops in the State. It is grown in the elevated hills of the Kadur and Hassan Districts. Its quality is equal to the best Arabian coffee. The area exceeds 108,000 acres, and the annual output is estimated at 10,000 to 12,000 tons, valued at nearly £1,000,000. The bulk of this coffee is exported to Europe through Mangalore, being sent dressed with the husk to meet the requirements of the English consumers, and as pounded coffee to the Continental buyers. Cardamom is also grown largely in the State, some of which is wild. Tea has also been tried and found to thrive well.

7. Other Commercial Groups.

Though large quantities of tobacco are grown, yet, due to imperfect curing and want of selection of proper varieties, very little of it is used in the manufacture of cigars and cigarettes, the latter of which is an important industry in the State. There is little foreign trade in areca, which is a valuable garden crop, in the regions bordering on the Western Ghats. Of fruits, mangoes and oranges are produced on a large scale. Though there is great scope for the cultivation of fruits, the industry has not received sufficient attention. A fruit canning and preserving factory has been established.

8. Hides and Skins and Tanning Materials.

Owing to the abundance of tanning materials, such as tangadi bark and myrobalans, the State has always been one of the principal markets for hides and skins for foreign countries. The hides and skins are sent half tanned. A tannery has been established for the manufacture of chrome tanned leather. The total value of hides and skins exported from the State annually amounts to, on an average, about £400,000.

9. Forest Timbers.

The Mysore forests contain very superior varieties of timber, the best known of which are rose and teakwood. There are, however, nearly 143 varieties of wood in the Mysore forests, of which nearly 45 contain hard

woods suitable for various manufacturing purposes A complete collection of these woods has now been made and their commercial possibilities demonstrated. The quality of many of the Mysore woods and their suitability for the various purposes requiring a high standard of quality, have now been successfully proved. There are also soft woods suitable for the manufacture of matches, in which an industry is being started. The skill of the Mysore carpenter, combined with the excellence of the material, afford great scope for the manufacture of high-class furniture, for which there should be a large demand in foreign countries. There is a Government factory, and also a private factory, which specialise in the manufacture of such furniture.

Both bamboos and grasses suited for the manufacture of paper pulp are found in abundance, but the industry has not as yet attracted capital The forests contain large supplies of myrobalams and other tanning materials, nux vomica, oil seeds, oleoresins.

10. Sandalwood and Other Carving.

The abundance of sandalwood, which lends itself readily to the most intricate carving, of ivory suited both for inlaid work and carving, and of the halle wood (wrightia tinctoria), which takes a fine lacquer polish and can be easily turned, has given rise to the three most important artistic industries in the State, viz , sandalwood carving, ivory carving, and inlaid work and lacquer work These industries have been greatly stimulated and developed by the help given by the Department of Industries to adopt new designs, use better tools, and create a larger market by opening a sales depot. These articles have now reached a high standard of excellence, and are expected to have a large home and foreign market. Mysore has always been famous for its stone carving Though confined in the past mostly to architecture in temples, of which there are some exquisite specimens in the famous temples at Halebid, Belur, Somnathpur and other places, the art has again been resuscitated, and many extraordinary specimens can be seen in the Mysore Palace Metal carving has been similarly revived.

11. Lac.

There are several species of trees on which the lac insect thrives. The cultivation of lac was an important industry in the past which had lapsed into decay owing to the want of scientific study of the habits and environments of the insect, the diseases and pests to which it was liable, and the best methods of propagation. The subject is now being carefully studied, and efforts are being made on a large scale to develop this industry. Improved methods of purifying and refining lac have been introduced, and its utilisation for various manufacturing purposes is being investigated.

12. Machinery Newly Introduced and Required for the Future in the State.

The resources of the ordinary cultivator are limited, and agriculture suffers greatly from want of capital, the uncertainty of the seasons and the indebtedness of the cultivating classes. Efforts have been made to introduce on a large scale improved ploughs and agricultural implements suited to the needs of the ordinary agriculturist, some of them having been specially designed to suit local conditions. The Government of His Highness the Maharaja of Mysore have inaugurated a liberal policy of granting loans in order to encourage the use of machinery for agricultural and industrial purposes, and a sum of nearly Rs 15 lakhs has been given as advances during the present decade Use of improved implements, such as ploughs, cultivators, threshers, etc., is steadily increasing There are enterprising cultivators who use oil and gas engines for irrigation, and there is a demand also for tractors Power driven machinery for dealing with agricultural products, such as rice and flour mills, sugar cane crushing, etc , is coming largely into use There is

likely to be a great demand in future for improved implements and machinery for various agricultural purposes, and for steam, oil and gas engines, for generating power where electric power is not available. The supply of cheap electric power in the cities of Bangalore and Mysore has created a demand for motors of various horse powers. Side by side with the development of cotton and woollen mills, the weaver has to be assisted in getting suitable preparatory machinery under better labour-saving conditions. There is great scope for the introduction of better winding, twisting, sizing and warping machines. As the future prosperity of the handloom industry is greatly dependent on the assistance given to the weavers to get their materials ready for the use of the looms and the organisation of the markets, it will be necessary to open factories to carry on subsidiary processes. Small factories with 6 to 12 power looms run by electricity are becoming popular, and the demand for such machinery is steadily increasing. The introduction of filatures for reeling silk is likely to create a good demand for Mysore silk and stimulate the production of raw silk, leading to a great demand for machinery in various stages of preparing silk. Spun silk from silk waste, for which there is a good demand in India, is likely to be undertaken, and a silk waste spinning plant will be required. The manufacture of lametta and gold thread has already been started in the State. The oil-pressing industry is on the threshold of a large development, and will stand in need of machinery. The manufacture of sulphuric acid, refining of wood alcohol, paper pulp, sugar and wood working, represent other industries in which the people of the State are now interested, for which machinery will be required.

Conclusion.

The State was the first in India to generate electricity by using water power, which has enabled it to develop important industries, such as textiles, gold mining, oil and flour milling, etc., on a large scale. It has large facilities for further development of hydro-electric power. The cheap power that these developments will be able to supply may be expected to lead to continuous industrial development in the State. It is rich in materials, such as silk, hides and skins, oilseeds, coffee, for which there is a great demand in foreign markets. It contains many skilled artisans able to manufacture artistic products of a high standard. It possesses many advantages for the development of raw materials. The Department of Industries and Commerce is anxious to utilise the opportunity offered by the British Empire Exhibition not only to stimulate trade in all materials required by foreign countries and the artistic works of its skilled artisans, but also to build up connections with manufacturers of machinery and others that can assist in the future development of the economic resources of the State.

GENERAL NOTES ABOUT THE EXHIBITS

THE principal articles in which there is much foreign trade from the State are minerals, such as gold, chrome and manganese, oil seeds, hides and skins, sandalwood and other essential oils, silk, cotton, timber and other forest products. Arrangements have been made to provide a fully representative collection of these articles. In one shelf are arranged all the mineral ores in Mysore, namely, gold, quartz, iron ore, manganese, chrome, magnesite, asbestos, kaolin, and the great variety of building stones, such as granites and marbles. Mysore is rich both in the higher and lower grades of manganese and chrome ore, and the increasing demand for the lower grade ores has now given Mysore a prominent place amongst the

world's suppliers. The exhibits from the Kolar Goldfields Mining Board consist of a graphical representation of gold production in the State. The Workington Iron Co. have sent complete samples of their manganese ores, and also some of the important products containing Mysore manganese. Mysore is the only State of which a detailed geological survey has been made, and a map of its mineral resources published. These maps are also exhibited.

A complete collection of the products of the Mysore Distillation and Iron Works, consisting of specimens of wood used, the charcoal produced, the pyroligeneous liquors, the grey acetate of lime, wood alcohol, tar, flotation oils and other distillates, have been displayed. The superiority of the Mysore charcoal pig iron, which nearly approaches in quality the Swedish iron, is evident even to a casual glance of the bar shown, and some articles made from it have been displayed. The markets for the by-products, such as acetate of lime and wood alcohol, are at present largely foreign.

Timber is another commodity produced in the State for which there are great potentialities of foreign trade. The Mysore timbers contain 143 different varieties, and these are displayed in decorative panels mounted by gables so as to set forth not only the characteristics of the wood. but to add to the decorative effect of the Mysore Court as a whole. A large number of sample boxes has been prepared containing some of these woods for distribution to *bona fide* enquirers, and full information regarding these resources has been collected.

Even more important than the supplies of unwrought timber are the potentialities of sending carved furniture and other manufactured articles to foreign countries. Mysore is very fortunate in having several species of timber, such as rosewood, teak, sandalwood, white and red cedar, haley, ebony and many others, which lend themselves easily either to a high polish or for being turned and carved. In order to show the possibilities of elaborate carving on rosewood a number of articles have been prepared, but of these the most conspicuous are a huge sideboard and cabinet illustrated with figures from ancient carvings, and a screen containing views of the Public Office Buildings, the Seshadri Memorial Hall, and the Palace at Bangalore. There are magnificent specimens of ebony and rosewood inlaid with ivory or mother-of-pearl. Among ivory inlaid articles are several trays, octagonal tables containing exquisite floral and other designs, but the most attractive exhibit is a small cabinet with ivory inlaid figures after the classic Oriental style, prepared by Mr. Imdad Hussain, of Mysore. So also is a table screen exhibited by him. Rosewood with shell inlaid work, consisting of trays with passages from Persian poets, is a new method of inlaying introduced in the State during the past five years.

The great improvement in lacquerware work can be seen from the specimens of toys, snakes, fruits, such as cocoanuts, grapes, pomegranates, which are very true to nature Owing to the introduction of power-driven lathes there is now a large scope for the development of the trade in toys, and the Department of Industries is now engaged in the problem of suggesting improved designs and methods of work.

Sandalwood carving shows the greatest variety. There is a model of the Halebid Temple, in which an attempt has been made to reproduce the laborate carving on its facades. A new departure has been made in the manufacture of caskets and other articles by the introduction of new designs taken from panels in old temples and well-known scenes of Mysore. Many useful articles, such as jewel boxes, smoker's sets, etc., have been displayed.

There is a fine display of silver articles exhibited by Messrs Krishniah, Chetty & Sons, consisting of tea sets, vases, caskets, etc, An elaborately-

likely to be a great demand in future for improved implements and machinery for various agricultural purposes, and for steam, oil and gas engines, for generating power where electric power is not available. The supply of cheap electric power in the cities of Bangalore and Mysore has created a demand for motors of various horse powers. Side by side with the development of cotton and woollen mills, the weaver has to be assisted in getting suitable preparatory machinery under better labour-saving conditions. There is great scope for the introduction of better winding, twisting, sizing and warping machines. As the future prosperity of the handloom industry is greatly dependent on the assistance given to the weavers to get their materials ready for the use of the looms and the organisation of the markets, it will be necessary to open factories to carry on subsidiary processes. Small factories with 6 to 12 power looms run by electricity are becoming popular, and the demand for such machinery is steadily increasing. The introduction of filatures for reeling silk is likely to create a good demand for Mysore silk and stimulate the production of raw silk, leading to a great demand for machinery in various stages of preparing silk. Spun silk from silk waste, for which there is a good demand in India, is likely to be undertaken, and a silk waste spinning plant will be required. The manufacture of lametta and gold thread has already been started in the State. The oil-pressing industry is on the threshold of a large development, and will stand in need of machinery. The manufacture of sulphuric acid, refining of wood alcohol, paper pulp, sugar and wood working, represent other industries in which the people of the State are now interested, for which machinery will be required.

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A complete collection of the products of the Mysore Distillation and Iron Works, consisting of specimens of wood used, the charcoal produced, the pyroligeneous liquors, the grey acetate of lime, wood alcohol, tar, flotation oils and other distillates, have been displayed. The superiority of the Mysore charcoal pig iron, which nearly approaches in quality the Swedish iron, is evident even to a casual glance of the bar shown, and some articles made from it have been displayed. The markets for the by-products, such as acetate of lime and wood alcohol, are at present largely foreign.

Timber is another commodity produced in the State for which there are great potentialities of foreign trade. The Mysore timbers contain 143 different varieties, and these are displayed in decorative panels mounted by gables so as to set forth not only the characteristics of the wood. but to add to the decorative effect of the Mysore Court as a whole. A large number of sample boxes has been prepared containing some of these woods for distribution to *bona fide* enquirers, and full information regarding these resources has been collected.

Even more important than the supplies of unwrought timber are the potentialities of sending carved furniture and other manufactured articles to foreign countries. Mysore is very fortunate in having several species of timber, such as rosewood, teak, sandalwood, white and red cedar, haley, ebony and many others, which lend themselves easily either to a high polish or for being turned and carved. In order to show the possibilities of elaborate carving on rosewood a number of articles have been prepared, but of these the most conspicuous are a huge sideboard and cabinet illustrated with figures from ancient carvings, and a screen containing views of the Public Office Buildings, the Seshadri Memorial Hall, and the Palace at Bangalore. There are magnificent specimens of ebony and rosewood inlaid with ivory or mother-of-pearl. Among ivory inlaid articles are several trays, octagonal tables containing exquisite floral and other designs, but the most attractive exhibit is a small cabinet with ivory inlaid figures after the classic Oriental style, prepared by Mr. Imdad Hussain, of Mysore. So also is a table screen exhibited by him. Rosewood with shell inlaid work, consisting of trays with passages from Persian poets, is a new method of inlaying introduced in the State during the past five years.

The great improvement in lacquerware work can be seen from the specimens of toys, snakes, fruits, such as cocoanuts, grapes, pomegranates, which are very true to nature. Owing to the introduction of power-driven lathes there is now a large scope for the development of the trade in toys, and the Department of Industries is now engaged in the problem of suggesting improved designs and methods of work.

Sandalwood carving shows the greatest variety. There is a model of the Halebid Temple, in which an attempt has been made to reproduce the laborate carving on its facades. A new departure has been made in the manufacture of caskets and other articles by the introduction of new designs taken from panels in old temples and well-known scenes of Mysore. Many useful articles, such as jewel boxes, smoker's sets, etc., have been displayed.

There is a fine display of silver articles exhibited by Messrs Krishniah, Chetty & Sons, consisting of tea sets, vases, caskets, etc, An elaborately-

carved silver casket containing scenes from the life of Sri Krishna has now been specially prepared for the Exhibition. Elaborate brass carving used to be carried on in Nagamangala in the past, but the industry is now nearly extinct. Brass trays carved with scenes from the Ramayana and the Mahabharata, and a good collection of elaborately-carved images, are exhibited.

There is a considerable amount of trade between Mysore and Europe in hides and skins. A complete collection of half-tanned and chrome tanned hides is exhibited, so, also, the tanning materials used, such as myrobolams, tangadi bark, etc.

Among agricultural products only such varieties as are likely to lead to development of foreign trade are exhibited. Oil seeds, coffee, the Mysore coprah (which is exclusively used for edible purposes as such), tamarind, tobacco and fibres, are all exhibited.

The article that is likely to be of the greatest importance from the point of view of foreign trade in the future is silk. Though the Mysore State produces more than Rs. 1,50,00,000 worth of silk, very little is now exported, being all consumed locally, as the methods of reeling do not suit the silk to the requirements of European weavers. The Sericultural Department has prepared special cabinets to show the improvements made in the breed of silk worms in Mysore, the difference in quality between cottage reeled and machine reeled silk, and the manner in which the two adapt themselves to the various processes. An up-to-date filature was started two years ago in the State. Private enterprise has come forward to take up the industry on a large scale. Filature silk finds a ready sale in the European markets, and a very large and important industry is being built up.

Some specimens of gold thread and lametta using the silk are exhibited, which is a new industry in the State.

A large variety of jacquard silks, sadies, etc., have been exhibited, as also very fine specimens of nakki work.

The Bangalore Woollen, Cotton and Silk Mills, Ltd., have sent a complete collection of their cotton and other goods.

The carpets manufactured in the Mysore Jail are renowned throughout the world, and the two magnificent specimens now displayed have been most exquisitely designed and woven.

The annual exports of sandalwood oil from the State are valued at £130,000 to £170,000, and special attention has been paid to provide a striking exhibit of the article, as it forms an important Government monopoly. The Essenflour Products Ltd., have exhibited a complete collection of essential oils, for which there is a large foreign market. There is a good collection of scents made in the Government soap factory and some private manufacturers.

The Mysore Fruit Canning Syndicate have exhibited their preserved fruits, jams, and chutnies.

The exhibits have all been collected and arranged by the Director of Industries and Commerce in Mysore, Bangalore. Visitors to the Exhibition may collect additional information from Mr. S. G. Sastry, B.A., M.Sc. (Lond.), the State officer in charge of the Mysore Court. The Director of Industries and Commerce in Mysore, Bangalore, India, will be glad to receive any enquiries from the visitors concerning the articles exhibited.

MYSORE

Articles Exhibited.	Exhibitor.
(1) Agricultural Products.	
Paddy, rice, ragi, navane, wheat, jola, green gram, horse gram, Bengal gram, beans, ground-nut seeds, hongey seeds, castor seeds, linseed, gingelly seeds, hippe seeds, til seeds, ground-nut oil, hongey oil, castor oil, gingelly, hippe oil, oil cakes from the above oil seeds, cocoanuts, white sugar, brown sugar, jaggery, mustard, tamarind.	The Dept. of Industries Commerce, Bangalore, India.
(2) Preserved and Manufactured Food.	
Ragi flour	Mrs. Boreham, Bangalore India.
Curry powders, chutneys and pickles ..	Mr. Andrews, South Parade Bangalore, India.
Tinned condiments and fruits	The Mysore Canning and Condiment Factory, Bangalore, India.
Preserved Indian fruits and special Indian jams	The Mysore Fruit Canning Syndicate, Bangalore India.
(3) Spices, etc.	
Pepper, cardamoms	The Dept. of Industries Commerce, Bangalore India.
Coffee	(1) Leslie & Anderson 14, Billiter Street, London, E.C.3. (1) T. H. Allan & Co 17, Gracechurch St London, E.C.3.
(4) Minerals.	
Ore specimens of gold quartz, iron, manganese, chrome, magnesite, mica, asbestos, kaolin, granites and marbles	The Director of Geology Bangalore, India.
(5) Forest Products.	
(*a*) Forest Timbers, Teak, Bagi, Bilvara, Dindiga, Burga, Tadasalu, Nandi, Jalari, Honne, Kadaga, Matti, Hebhalasu (Wild Jack), Bobbi, Devadaru (red cedar), Kare (ebony), Swami(redwood),Dhoopa (white Dammar), Kagli, Ankole, Kamaraka, Bikke, Maddi, Gorivi, Geru, etc. *Note.*—All the above specimens and several more are used in the two panels and archways of the Mysore Court. The botanical names are published in a separate list, which can be had on application.	The Conservator of Forests in Mysore, Bangalore India.

(5) Forest Products (*contd.*)

Articles Exhibited.	Exhibitor.
(*b*) Minor forest products, such as lac, tanning materials, etc.	(1) The Conservator of Forests in Mysore, Bangalore, India. (2) The Chamundi Lac Works, Chennapatna, Bangalore District.
(*c*) SPECIAL FOREST EXHIBIT.	
A model of the Khedda operation, as conducted during the visit of H.R.H. The Prince of Wales. (Khedda operation is a mode of catching wild elephants.)	The Conservator of Forests in Mysore, Bangalore, India.

(6) Textile and Other Products.

(*a*) Samples of silk cocoons (various breeds), mulberry leaves, cottage reeled silk, filature reeled silk, photographs of the above processes and operations.	The Dept. of Agriculture (Sericulture Section), Bangalore, India.
(*b*) Samples of several varieties of cotton grown in Mysore State.	The Dept. of Industries & Commerce, Bangalore, India.
(*c*) Sisal hemp and other fibres	

(7) Textile Exhibits.

(*a*) Swadeshi coating, Swadeshi skirting, undervests, socks, rugs, druggets, door mats, samples of pile carpets.	The Bangalore Woollen, Cotton & Silk Manufacturing Co., Bangalore, India. Messrs. Binny & Co., 122, Leadenhall Street, London, E.C.4.
(*b*) Silk of different patterns, socks, mufflers, girdles and borders, cushion covers, etc.	The Salvation Army (The Tata Silk Farm), Basavanagudi,Bangalore City, India.
(*c*) Indian ladies' dress material like sarees made of cotton, silk, silk and gold thread, in beautiful patterns.	The Govt. Weaving Factory,Bangalore,India.
(*d*) Knitted and embroidered dress and dress materials, in cotton, silk, and artificial silk	(1) The Govt. Weaving Factory,Bangalore,India. (2) Mrs. Pavanabai, Malleswaram, Bangalore, India.
(*e*) Window curtains, table covers, cushion covers, hemstitch work, embroidery, delicate lacework, decorative and service silks and linens	The Dept. of Industries & Commerce, Bangalore, India.
(*f*) Tapes, twines and navars, etc.	The Dept. of Industries & Commerce, Bangalore, India.

(8) Metallurgical Industries.

Articles Exhibited.	Name of Exhibitor.
(*a*) Charcoal pig-iron .. .. *Note.*—The Mysore Iron Works (owned and controlled by the Government of Mysore), happens to be the first and the only factory to manufacture charcoal pig-iron on a large scale in the whole of Asia. Charcoal is obtained by the destructive distillation of wood and the bye-products of wood distillation, such as pyro-ligneous acid (crude and distilled). Settled tar, soluble tar, crude methyl alcohol, refined methyl alcohol, acetone, acetic acid, grey-acetate of lime, solvent oils, guicacol, creosote oils, etc., are all exhibited. Also the chief varieties of timber carbonized are also exhibited.	The Mysore Iron Works, Bhadravati, Shimoga District, South India. The Govt. of Mysore, Bangalore, India.
(*b*) Special specimens of gold quartz, photographs of gold mining operations at Kolar (India), charts and models.	The Kolar Gold Mining Board, Kolar Goldfields, India. Messrs. John Taylor & Sons, 6. Queen Street Place, London, E.C.4.
(*c*) Special samples of manganese ores obtained from the Mysore State, and samples of manganese steel.	The Workington Iron Co., Workington.

(9) Leather and Leather Goods.

Samples of hides, skin and leather (country-tanned and chrome-tanned), and also leather goods and articles.	(1) The Dept. of Industries & Commerce, Bangalore, India. (2) The Mysore Chrome Tannery, Bangalore, India.

(10) Essential Oils.

Samples of essential oils, like sandalwood oil and oil of clove, cinnamon, cinnamon leaf, cardamom, patchouly, ginger grass, Ajwan seeds, coriander, vetiver, etc., etc. Also samples of thymol.	(*a*) Essenflour Products, Ltd., Mysore, India. (6-8 Beauchamp Street, London, E.C.1.) Also The Mysore Govt. Sandalwood Oil Distilleries, Bangalore and Mysore, India.

(11) Pharmaceutical Products.

Samples of crude drugs and pharmaceutical preparations from them—belladonna, colotropis, jambul, jalap, pinapora, cinconna, kalodana, gempian, alepris, etc., etc. (30 exhibits).	The Mysore Pharmaceuticals, Ltd., Bangalore, India.

(12) Inks.

Samples of different inks	Saliah's Warehouse, Ltd., Ink Manufacturers, Bangalore, India.

(13) Soaps and Perfumes.

Articles Exhibited.	Exhibitor.
(*a*) Samples of household and toilet soaps—Sandal, Gulab, Jasmine, Baba Rose, New Lavender.	The Govt. Soap Factory, Bangalore, India.
(*b*) Samples of high-class handkerchief perfumes Jasmine Special, Indira, Raja-Mahal, Sundari, Santal-Ranjan, Wanee, Eau-de-Cologne and Special Lavender.	Do. do.
(*c*) Indian scents and perfumery articles, like scented sticks, perfumery tablets, incense powder, etc.	T. L. Upadhyaya, Sugandhakari, Mysore.

(14) Brass Ware and Brass Art Work.

Samples of brass work, like elaborately carved trays, Hindu gods, specimens of birds and animals, and also some household articles.	The Dept. of Industries & Commerce, Bangalore, India.

(15) Goldsmith and Silversmith Work.

Samples of goldsmiths' and silversmiths' work—Caskets, statues, cups, flower vases, table ware, ornamental silver and gold articles, toys, models, souvenirs, plates, embossed silver images, images and idols of worship in India. The articles are all beautifully designed, exquisitely carved, and perfectly executed.	(*a*) C. Krishnayya Chetty & Sons, Bangalore City. (*b*) Phalajrai Ramanarayan & Co., Bangalore City.

(16) Lacquer Ware.

(*a*) Lacquerware Toys—Swinging cradles, imitation tea sets, powder boxes, tops, rattles, sets of Indian cooking vessels, imitation fruits and flowers, pop-guns, engines, motor cars, humming tops, watch stands, saucers, needle cases, imitation vegetables, etc.	(*a*) The Govt. Industrial School, Chennapatna, Bangalore District. (*b*) The Dept. of Industries & Commerce, Bangalore, India.
(*b*) Lacquerware—Serviceable articles like rulers, penholders, flower vases, powder boxes, etc.	The Dept. of Industries & Commerce, Bangalore, India.

(17) Inlay-Work.

Rosewood and ebony inlaid work, with ivory and mother-o'-pearl—Almiras, drawing room screens, teapoys, tables, caskets, trays with floral designs, cigar boxes, ladies' writing cases, trays with scenes from Omar Khayyam, jewel boxes, etc.	(*a*) The Chamarajendra Technical Inst., Mysore, India. (*b*) Imdad Hussein, Mysore, India. (*c*) The Government Art Workshops, Bangalore, India.

(18) Carving and Woodwork.

(*a*) Ivory Carving—Caskets, swamy figures, umbrella handles, visiting card cases, daggers, ladies' handbag handles, beads (carved and ordinary), powder boxes, toys, bangles and statues, fretwork, etc.	The Govt. Art Workshop, Bangalore, India.

(18) Carving and Woodwork (*contd*).

Articles Exhibited.	Name of Exhibitor.
(*b*) Sandalwood Carving—Caskets, glove boxes, jewel boxes, handkerchief boxes, smoking sets, cigar and cigarette boxes, visiting card cases, bridge boxes, figure carving, specially carved panels, album covers, a replica of the famous Halebid Temple, powder boxes, photo frames, walking sticks, etc.	(*a*) The Gudigar Co-operative Society, Sagar, South India. (*b*) Dottoba Rao, Sorab, South India. (*c*) The Government Art Workshop, Bangalore, India.
(*c*) Rosewood and ebony carving—A magnificent rosewood carved cabinet, rosewood carved screens, carved tables in different designs, Durbar chair, grandfather's clock.	(*a*) The Chamarajendra Tech. Institute, Mysore. (*b*) The Government Art Workshop, Bangalore, India.
(*d*) Models of the new palace at Mysore and the Library building of the Indian Institute of Science, Bangalore. (Models constructed out of the different timbers found in the Mysore forests.)	The Government Art Workshop, Bangalore, India.

(19) Musical Instruments.

Two Veenas—Elaborately decorated with ivory inlaid work	The Dept. of Industries & Commerce, Bangalore, India.

(20) Special Exhibits.

(*a*) Model of a patent float releaser for gauging the velocity of water in river beds.	Y. Ramaswamy, B.E., Asst. Engineer, Mysore Govt., Public Works Department, Mysore, South India.
(*b*) Carpets—Two large magnificent specimens of carpets. Also several small carpets.	(*a*) The Central Jail, Bangalore, India. (*b*) The Dept. of Industries & Commerce, Bangalore, India.
(*c*) Relief map of Mysore with the economic products of Mysore carefully marked.	The Dept. of Industries & Commerce, Bangalore, India.
(*d*) A special set of photographs of Mysore State.	Do. do.
(*e*) Trophies and Shikar Exhibits— (1) Elephant tusks mounted on ebony, with a mirror. (2) Elephant head with an abnormal growth of a pair of tusks. (3) Tiger heads, tiger skins, bison heads, etc., etc.	(*a*) Theobald Bros., Mysore, India. (*b*) Van Ingen Van Ingen, Mysore, India.
Two ivory tusks in full, mounted on an ebony pedestal with silver work.	The Conservator of Forests, Bangalore, India.

REPORT ON THE SOCIO-ECONOMIC CONDITIONS OF THE ABORIGINAL TRIBES OF THE PROVINCE OF MADRAS

BY

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PRINTED BY THE SUPERINTENDENT
GOVERNMENT PRESS
MADRAS
1948

Price, 2 rupees 8 annas

CHAPTER VIII

TRIBES OF SOUTH KANARA

MALE KUDIYAS

General Description and Habitat

The Kudiyas are a mild and meek people, short in stature, generally fair in complexion, with a characteristic way of tying their dhoties and sarees. They appear to be a cheerful and contented people. The real hill Kudiya called Male Kudiya lives on the Western Ghats bordering Mysore at Dharmastala, Shishila and Neriya. Many Kudiyas have left the hills and are found in Puttur and Mangalore taluks of the South Kanara district. Some Kudiyas near Mangalore who are said to be Jains returned themselves in one census as Savaras, but this was only a whimsical stunt.

Population

There were on the whole 3,941 Kudiyas in the South Kanara district according to the 1941 Census Report.

Social Organization

' Gurikara ' is the priest and head of the caste and is elected by the village—usually the village elders only. He settles disputes including divorce, etc. The Gurikara chooses his own council over which he presides. Fine is the usual punishment inflicted; and it is paid in the name of the deity, and feasting is done on fowl curry and toddy.

Another version is that the fine collected is not spent on feasts, but is given to the temples or the various godlings. The Gurikara has no share in the fine.

If the accused refuses to pay the fine, he is excommunicated until he pays the fine. He is not required to pay anything over and above the fine in default of payment at the first instance.

Language

The Kudiyas speak Tulu. They are all illiterate people.

Customs and Habits

The Kudiyas on the Ghats do not come down except once a week when they fetch the cardamom crop during the season. Contrary to the usual custom everywhere, a cluster of Kudiya families live together. They live, for the most part, in the jungles—beneath rocks in caves or in low huts. They are orthodox and do not take meals except from Brahmans. They do not shave their foreheads like certain other tribesmen. Theft is common in this community. Sexual relations amongst the tribe is very loose They are fond of toddy.

They are Hindus, but are not untouchables; they worship Hindu gods and all the usual local deities. Their chief deities are Kala Bhairava, Kamandevara and the Pandavas. They offer flesh, toddy, fowl curry, etc., to the gods at the time of worship. When a deity is worshipped the Paravas—a Harijan class—are engaged for a dance. The Paravas are given a loan of the deity's jewels to be worn by them during the dance. They are also paid in cash. The usual occasion for festival is ' Visakha '

They follow the ' Aliya Santana Rule ' (succession in the female line) generally. Some in Shishila on Mysore borders follow the ' Makkala Santana Rule ' (patrilineal).

Marriage

When a marriage is contemplated, the custom is for the prospective bridegroom's father to go, accompanied by two women, to the girl's parents with betel leaves, arecanuts and gingelly oil. Acceptance of these things is the sign of consent by the other party. The marriage ceremony is very simple. The bride and the groom are made to join their hands and water is poured over the joined hands by the girl's father. Those who have settled on the plains have adopted the ceremonials of the castes of the plains.

Widows may re-marry and there is no restriction to her marrying her deceased husband's brother. The really strange feature of their family life is that they do not object to a widow marrying her eldest son. This does not appear to be a custom, but two cases were reported from Neriya. In one case, there was no issue, but, in the other, the ' mother-wife ' bore a son to her own son. Divorce is permitted.

Disposal of the dead

It is said that the bodies of those who die near the settlement are cremated, and of those who die far away are buried.

Economics

Dharmastala is a great shrine and the trustee here plays the father to the tribesmen. The hill men are attached to the temple and cultivate the temple lands. An " umbali " which is equal to six Kalasiges—which makes 1½ acres of land—is assigned to each Kudiya free of rent. If more lands are cultivated, for every 4 Kalasiges, rent is charged at 4 to 5 murras of rice. A murra is 42 seers. This works out to 250 seers per acre. Seed is supplied. The first crop yields 4 to 5 murras, and the second 2 murras. The " umbali " is similar to a " service inam." The service consists of lighting the temple, erection of pandals (booths), pulling the car, decorations, etc. They have to bring the bamboo from the forests belonging to the temple. For one member in every family, the temple provides two meals every day. Everyone owns cattle—plough-bulls as well as milch cows. They do not keep sheep or goats. They have he-buffaloes also for ploughing. The buffalo is

costly, and costlier than the cow. Crops get destroyed frequently by wild beasts, boars and bisons.

Shishila is a valley further west on the Mysore borders. The Kudiyas of this valley and Dharmastala are very much like plainsmen to-day, except that they have their caste rules and caste organization. At Shishila, too, the Kudiyas do not own the lands. There are no ' Umbali ' lands here. They cultivate lands on lease.

At Neriya, the true hill type of Kudiyas live. Four hills bordering Mysore form the homelands of these Neriya-Kudiyas. Cardamom estates afford the occupation. There are about 60 to 80 houses on these hills containing some 250 members. They were doing some Kumari cultivation, but even this has been given up owing to the menace of elephant, bison and wild boar. There are three estates here now, and the fatherly Hebbar owns one of these. Originally, the Hebbars owned all these, but partition between brothers resulted in sales to others. The wages paid to the Male Kudiyas are rations plus 4 or 5 annas per day. They get oil and other commodities also—all, as much as they want. Clothing is supplied in May every year. In short, it works like a happy commune headed by the Hebbar family. Sri Hebbar pays also the tree tax on the toddy trees reserved in Survey No. 146 for the use of Male Kudiyas. Of the other two estates, Kadalkar follows the Hebbar method. But with the Travancore Company, it is different. Rations are not given for children for the reason that they do not work.

Some Kudiyas rear pigs as a subsidiary occupation; most of them keep fowls. Many have not taken to pig-rearing for fear of tigers. The Kudiyas do not hunt.

Dress

The men wear the ' Dhoti ' in a peculiar way. They bring the cloth from under left arm over the chest and the back to the right shoulder where they knot the two parts of the cloth, a span away from the two ends. The flaps beyond the knot are tied around the right side of the body and a belt woven with cane keeps the cloth in place. A knife is stuck into the belt. The women wear the usual saree, but bring the end up to a knot on the shoulder like how the men do.

Food

The Kudiyas' diet consists of rice in the night and ' Kanji ' (gruel) in the morning. The side dish is mostly mere salt and chillies. Dhal is taken rarely. They eat pork, but not beef.

KUDUBIS

Habitat and Population

The Kudubis are found only in the Coondapoor taluk of South Kanara district. A total number of 11,885 Kudubis were returned from South Kanara in the 1941 census.

FIG. 1.—PANIYAS OF KANNOTH, MALABAR, A TRIBE OF AGRICULTURAL LABOURERS, FORMERLY AGRESTIC SLAVES

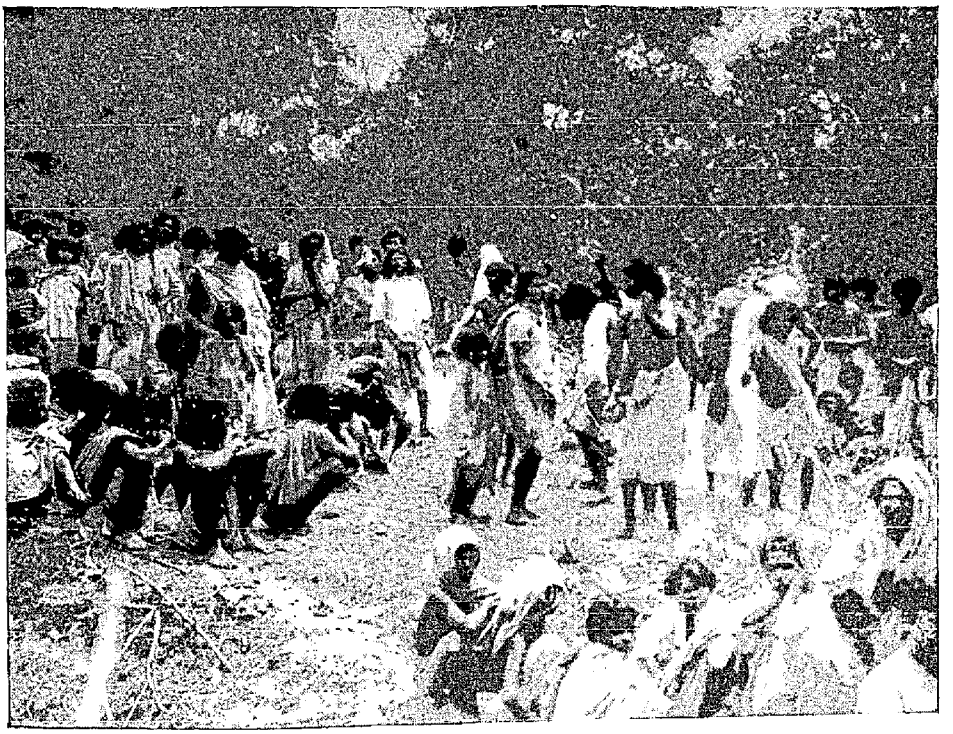


FIG. 2.—PANIYA DANCE

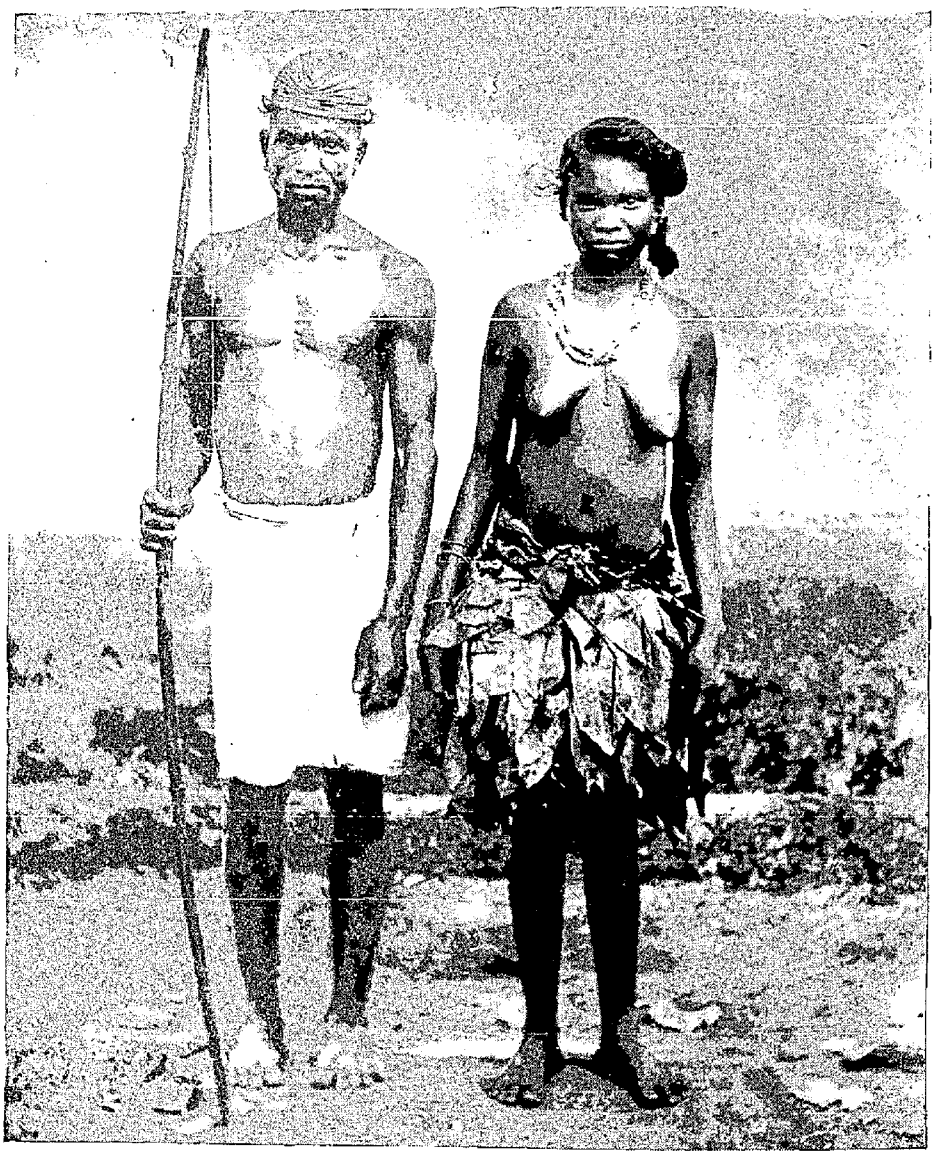


FIG. 1.—A KORAGA COUPLE FROM SOUTH KANARA, A TRIBE OF BASKET-MAKERS. (THE WOMEN WERE FORMERLY FORCED TO WEAR LEAF APRONS.)

Tradition

The " Kadu Konkani " of the early census table is probably the Kudubi. The Kudubis call themselves Kaluvadis. Another tribe in an equally depressed condition called Marathi is often confused with the Kudubis. Something in common between the two tribes can be suspected from the very fact that two sects of Kudubis speak Marathi. These are the ' Are ' and the ' Jogi ' septs. It is likely that these two are not Kudubis and are Marathis only. The confusion appears to have come about owing to the general mistakes made about the Konkani language. It is wrongly classed as a dialect of Marathi by many. The Konkani really belongs to the Ardha Magadhi group of Prakrits and those who speak it are also counted among the ' Pancha Gaudas ' and not the ' Pancha Dravidas '. The three others, viz., Goa, Kodiyal and Karia speak Konkani. It is noteworthy that the Konkani they speak is like the Konkani spoken by the Roman Catholic Brahmin of South Kanara and unlike the Hindu Brahmin's Konkani. The Catholics are known to have come from Goa, having been converted by the Portuguese there. The Goa Kudubis claim to have brought with them the sweet-potato, the cashew nut, the chrysanthemum and the Indian spinach. This latter claim is interesting and may signify that they followed in the wake of the Catholic Brahmins, perhaps, as their servants. The Catholic dialect is attributable to this. The Brahmins, however, would not admit them to Christian equality and brotherhood, being ' Catholics ' and they drifted away in their own clans, vargas or sects and kutumbas or families.

The Karia Kudubi represents the real Kudubi as different from the Marathi. He is short in stature and small, though well made. His features conform to the so-called Dravidian type. This need not conflict with the Gouda heritage of the Kudubi seen in his language Konkani. The Gouda too has generally escaped the white admixture of the northwest in the interiors of the country.

Subdivisions

There are five endogamous clans as already detailed under " Tradition " (viz., Are, Jogi, Goa, Kodiyal and Karia). The vargas are the exogamous septs within the clans.

Language and Literacy

Everyone speaks all the languages—Tulu, Kannada and Konkani. There are two schools being run exclusively for Kudubi children at Kannorie and Paduperar. They are taught in Kannada, the regional language. This does not present any difficulty, for, in this district, the teacher generally knows Konkani and the children too know Kannada. This is a trilingual district where the cosmopolitanism, characteristic of the Karnataka, prevails.

Customs and Habits

The kutumba (family) sense with this tribe is remarkable. It is a family commune. The family never divides and lives in one

house which is built all around a quadrangle, each husband and wife having separate apartments with separate bathing places with kitchens, gardens, etc., attached. Individuality shows itself here. A family in the Coondapur taluk has as many as 150 members. Another, at Bajpe, which is an average 'kutumba', has 30 families (husband and wife with their children). Each couple occupies one of the rooms round the quadrangle which is open to the sky, having the rooms well ventilated. The quadrangle is big enough for drying or airing grains and other commodities, and for assembling of the family and for dance. The cultivated fields are all around this great family house.

The Kudubis eat flesh—but only of animals that they catch. They snare rabbits, porcupine and bear and will not part with their flesh for any price. They are very fond of fish and are experts in fishing. They will not touch beef, and avoid even fowls and whatever has been domesticated. They are prohibitionists and avoid alcohol. They are fond of the hunt in which they use nets and spears. They have no dogs for the hunt. They are generally poorly clothed. They lead a primitive life with thrifty habits.

Their favourite entertainment is the "kolattam" by the men folk. They have a pretty-looking drum which is earthenware with raw hide stretched on to the opening on one side. A Kudubi colony is called a 'padavu'.

The Kudubis, like the Koyas and some other tribes of the Agency areas, do not use the new produce before the 'new crop festival' is performed. They call it the "Hosthu" festival.

Marriage

Girls are married either before or after puberty. Their marriage custom slightly varies from those of the Kudiyas. They celebrate the marriage for five days instead of only one day in the case of the Kudiyas. Widow re-marriage is allowed; but, as a custom, the widow will not marry a man of the sept to which her deceased husband belonged. Widow re-marriage is not accompanied by elaborate ceremonial as in the case of that of a virgin. Sometimes the marriage consists merely in the holding of a feast.

Disposal of the Dead

They bury the dead in a sitting posture with the legs crossed tailor-wise. Unlike the plains people amongst whom they live, they put some cooked rice in the mouth of the corpse before the grave is filled in.

Economics

The main occupation of the Kudubis was 'kumari' cultivation. They call their dry cultivation 'kumari' which is the name applied to shifting cultivation elsewhere. The Kudubis have given up shifting cultivation and have settled down. Some Kudubis were employed in the manufacture of 'cutch' from *acacia catechu*.

This tree is confined to Coondapoor taluk, as a rule. This was, in the past, a Kudubi monopoly. The Kudubi would begin his operation—felling the tree, etc., with puja to " Siddhe Devaru ". It is, perhaps, the monopolist trade in cutch that took some Kudubis to Travancore where they exist under the name of ' Kudumi ' and speak Konkani.

It will be interesting to note that ' Kudumi ' is also the caste name of the medicine-men belonging to the Irula and Jogi castes of the eastern districts. These Kudumis were once famous for their knowledge of curative herbs and roots, for blood-letting as a treatment, and for curing the effects of poisonous bites.

MARATHI

Habitat

The Marathis inhabit generally the Western Ghats but they abound in Adoor I and II, Panathadi of the Kasargod taluk, Aletti of the Puttur taluk, Hirga of the Udipi taluk and also in the interior of the Coondapoor and Mangalore taluks.

Population

Out of a total population of 37,485, 36,936 Marathis inhabit South Kanara district; the rest are scattered in Bellary district.

Tradition

It is rather a strange name to apply to a tribe considered in this report. Marathi is of Maharashtra and signifies the great people of the Bombay Presidency who ruled India before the British took it. This tribe has been given the name for the reason that they speak a low type of Marathi. They are taken for a low class who had migrated from Southern Mahrashtra or Goa. It may be that they and the Kudubis came down during some troublous periods—some Portuguese persecution or Muslim invasion.

Language

It has already been said above that they speak Marathi but some speak the Konkani dialect. They are, as a class, illiterate.

Social Organization

" Hontagaru ", they call their caste headman who settles all the disputes that arise in the society. They are divided into twelve exogamous " Balis " (divisions).

Customs and Habits

They are Hindus and are high up in the social scale. They follow Hindu customs and employ Brahman priests at religious functions. They respect the Sringeri Mutt and their chief deity is goddess " Mahadevi ". They are known to work hard and make good domestic servants and farm labourers. They eat fish and flesh,

but not beef and such other flesh as is usually prohibited among Hindus. They are addicted to drink.

Marriage

" Dhare " form of marriage is followed. There are two forms in " Dhare ". Marriage between virgins and bachelors is called " Kai Dhare ", and widow re-marriage is known as " Budu Dhare ". The essential part of the marriage is the " dhare ", the right hands of both the bride and the groom are joined together, the hand of the girl being placed over that of the groom, and water is poured on the joined hand from a silver " dhare gindi " decorated with flowers, coconut, sandal paste, etc. The " dhare gindi " is touched and blessed by the caste head, the parents and the managers of the two families before water is poured on the hands of the couple.

The caste head is consulted by both parties before alliance is formed.

Though not common, infant marriage is not prohibited. Marriage between a boy and a girl belonging to the same ' Bali ' is considered incestuous as falling within the prohibited degrees of kinship.

Widow re-marriage has social sanction, but the widow cannot marry into the family of her deceased husband. In some places widow re-marriage is prohibited. Divorce is allowed and is easy.

Economics

Their chief occupation was " Kumari " cultivation, and after its being banned, they are chiefly farm labourers. Though technically they are touchables they are so poor and miserable that their deplorable economic condition is no better than that of the usual Depressed Classes.

The Forest Department have permitted some Kumari cultivation in the villages of Muliyur, Karadka, Adoor, Mandokola, etc., with a view to encourage settlements within the reserve forests which may be useful for the departmental purposes also.

The Marathis are very primitive and stick to the hills; even those in the plains are very poor.

Several representations were made to Government by local officers and well-wishers to include this community among the Scheduled Classes so as to make them eligible for the special facilities afforded by the Labour Department. Unfortunately, their name and their being high up in the caste hierarchy has led to a denial of their request.

KORAGA

Habitat and General Account

The Koragas are found in the South Kanara and Bellary districts. This tribe is classed among the Depressed Classes but not as a hill tribe or a primitive tribe. There is however no other

tribe which is in a more primitive state than the Koraga. The present state of the tribe also illustrates the fate of communities which go under in a political upheaval. It will surprise anyone who sees the Koraga of to-day to know that he was once of the ruling class.

They are quiet and inoffensive, and have specialized the bearing of insults and ill-treatment as a tribal badge. They live in the outskirts of villages. They cannot live in mud huts and may live only in huts of leaves called " Koppus ". They were agrestic slaves bought and sold with the land till recent times. A section of them called " Ande Koragas " had to sling a pot round their neck for them to spit into since they were too low to be allowed to spit on the highway. A Koraga cannot use the highways after dark. Their women were compelled to dress themselves in leaves. The Koraga's truthfulness is proverbial. It is said that though they are in this degraded position they do not appear to be unhappy.

Population

A total number of 4,042 Koragas were returned in the 1931 census from the districts of South Kanara and Bellary, but the tribe has been left out in the 1941 census.

radition

A certain ' Habashika ' invaded Tuluva, and conquered it from Mayura Sarma, King of Vanavasi. This Mayura Sarma is evidently the scholar of Kanchi who founded the Kadamba empire. The ' Habashika ' was treacherously murdered after a reign of twelve years. The Kadambas now attacked Habashika's followers, overthrew them and subjected them to slavery. The Koragas appear to have accepted the slaves' position on condition that they are fed day after day without having to bother about the next day's meal.

The name Koraga may be a corruption of ' Kuruvar ' or hillmen. But the first part of the name has a new significance in this case. ' Kora ' is a name applied to sects among some northern tribes—the Gadaba, Muka Dora and Rona. It is said to mean ' Sun '. The Koragas are sunworshippers and name their children in the hill tribe fashion of the north after days of the week.

The Koragas have also taken to other deities, chiefly Mariamma. They observe the modern festivals of ' Gokulashtami ' and ' Vinayaka Chathurthi '.

The manner in which the Koragas name their children has already been mentioned. To give a few examples, ' Aita ' (Aditya) is the name of one born on Sunday: ' Toma ' is the name for Monday. The interchangeability of ' Ta ' and ' Sa ' in Tamil is a well known fact. ' Toma ' is therefore ' Soma ' which means the moon; ' Angara ' for Tuesday, after Angaraka or Mars: Gurva ' for Thursday after ' Guru ' or Jupiter: ' Tanya ' for Sani or Saturn and ' Tukra ' for the day of Sukra—Friday. It is

noteworthy that the names of the planets, sun, moon, Mars, etc., are the Sanskrit names and not the Tamil ones. They have no temples but consecreate a spot beneath a *nux vomica* tree and worship a deity called ' Kata '. ' Kata ' is like the Tamil word ' Katavul ' (கடவுள்) for God. Sunday is the auspicious day for them. There is enough in the above for an interesting speculation about a possible connexion of the Koraga with the tribes in Kalinga.

Social Ordeal

The Koragas have another interesting custom which recalls the Koya to memory. When a woman is found guilty of adultery, she has to pass through seven huts set on fire before she is purified and becomes fit for readmission into the caste. Apart from the similarity to the Koya, the real significant feature of this ceremony is that the ritual demonstrates Manu's law that seven generations are necessary to correct a lapse from the prescribed rules of endogamous marriage. Yet, Manu was the so-called Aryan and Hindu, and these tribesmen, the submerged race.

Economics

The chief occupation of the Koragas is basket-making. Their general economic condition has already been dealt with under ' General Account '.

CHAPTER IX

TRIBES OF TAMILNAD

1. THE TRIBES OF THE NILGIRIS

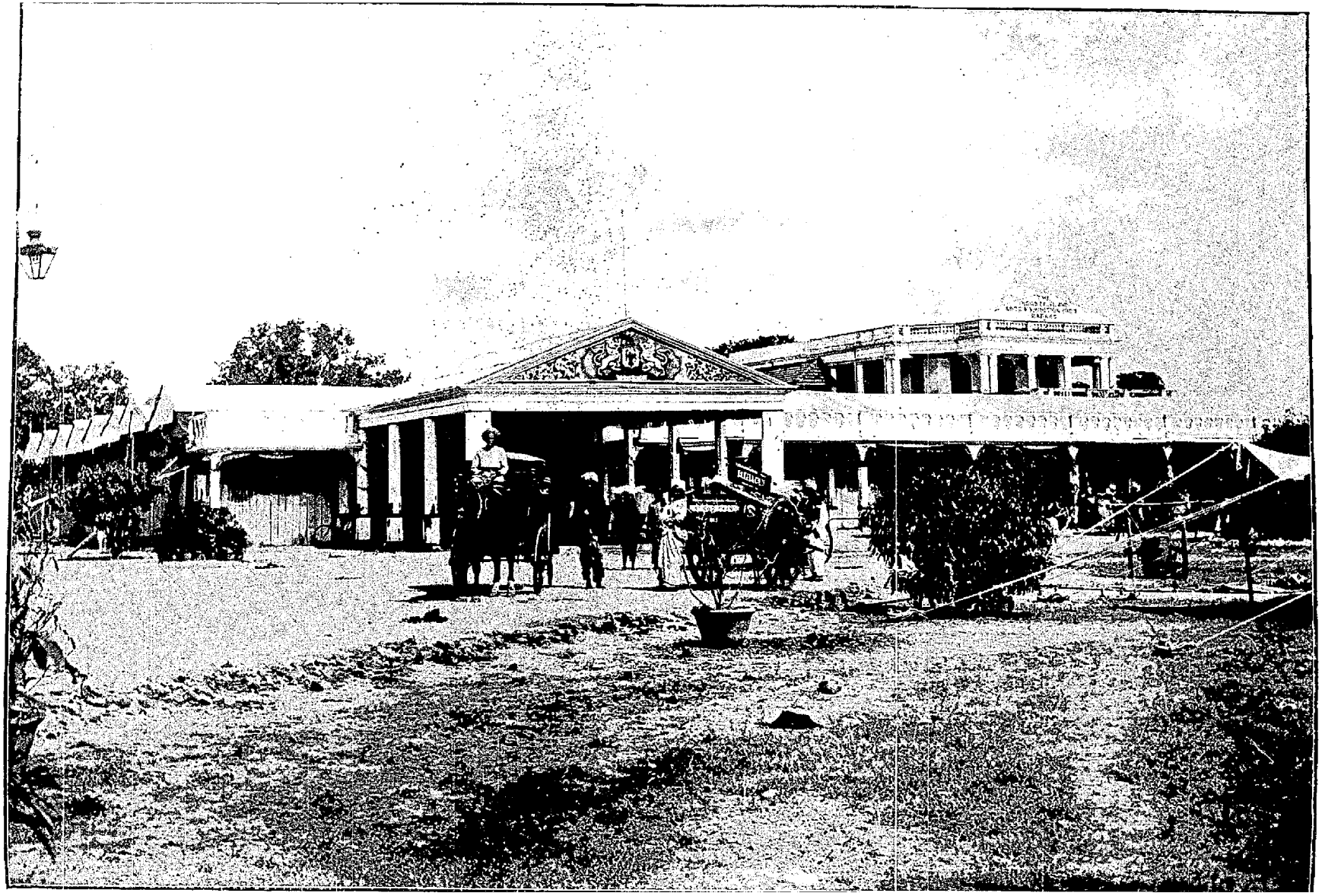
The isolation of the Nilgiris is well known. These six or seven hundred square miles with a central altitude of 8,760 feet arise almost abruptly from the plains of Coimbatore. On the north and east they slope down through lesser ranges towards the " Kaveri " chain of hills; on the west to the Kerala uplands through Wynaad which is part of the Nilgiris though included now in the Malabar district. The area was first explored by Englishmen only in 1819. Until then, this favoured region was in the possession of the Toda, Badaga, Kota, Irula and Kurumba.

The Badagas are the largest in number and are the agriculturists. Their name வடக்கன் (vadakkan) indicates they have migrated to these summits from the Kannada country to the north. They are Saivas and speak a dialect of Kannada. They also worship Rangaswami and some minor deities in the ordinary Hindu way. At Hoolikkal they have a temple to Hetti commemorating the *Sati* by the widow of a Badaga of wealth. The relic of *Sati* is now seen in the present Badaga funeral when the widow's robe is thrown on the funeral pyre.

These colonists, being industrious have increased in wealth. Their life however is intimately connected with the life of the Toda, Kota, Kurumba and Irula.

The Todas claim that they were the first on the soil and that the Badagas came and occupied these lands with their permission. The ' gudu ' grain which the Badagas give the Todas is often called a ' tribute ' in recognition of such vassaldom. But the Toda begs it and pays respects to the Badaga, which he will not do, were he the overlord. The Badaga makes gifts of grain to the Kurumba too which is ascribed to a fear of the Kurumba's necromantic powers. Necromancy is suggested in the case of the Toda too. The Badaga pays the Kota in grain and coin for his services.

As it existed prior to European occupation these tribes together furnished the ordinary elements that make up Hindu society. The Badaga was the tiller, the Toda was the dairy-man, the Kota was the artisan and musician and the Kurumba and Irula were the gatherers of forest produce. They appear to have come to the hills at different times and whatever their previous occupation might have been, settled down to the above ones with unparalleled resignation and contentment. The ' bow and arrow ' tradition described under ' Todas ' show that their present pastoral life was adopted by them under some dispensation. Their very polyandry may signify their anxiety to keep the class and its functions pure and



THE

MADRAS INDUSTRIAL

AND

ARTS EXHIBITION,

1903.

DESCRIPTIVE AND CRITICAL REPORT ON THE EXHIBITS, WITH 21 PHOTO-PROCESS PLATES, THE AWARD LIST, AND AN INDEX.

COMPILED, EDITED, AND AMPLIFIED FROM THE NOTES OF THE OFFICIAL REPORTER TO THE EXHIBITION

BY

H. T. HARRIS.

Madras:
PRINTED BY SRINIVASA, VARADACHARI & CO.

1905

THE MADRAS INDUSTRIAL AND ARTS EXHIBITION, 1903 *(under the auspices of the 19th Indian National Congress) was the outcome of a very representative public meeting held on Tuesday, the 12th March 1903, under the presidency of the Hon'ble the Nawab Syed Mahomed Bahadur, when a resolution was passed that an Industrial Exhibition should be held in Madras in December 1903. Subsequently other meetings were held, a strong working Committee was elected and Secretaries and other office-bearers were appointed.*

These gentlemen were :—

THE HON'BLE Mr. C. SANKARAN NAIR, C.I.E., B.A., B.L. *President.*

MR. P. R. SUNDARAM AIYER, B.A., B.L.,
„ C. KRISHNAN, M.A., BARRISTER-AT-LAW,
„ M. VIRARAGHAVACHARIAR, B.A.,
„ D. V. HANUMANTHA RAU,
Honorary Joint Secretaries.

„ M. R. RAMAKRISTNA AIYER, B.A., B.L.... *Honorary Treasurer.*

The Cathedral House at Teynampet was rented for the purpose of the Exhibition, as it is in a fairly central locality and has a large walled compound. It was not until early in November that the Committee were able to commence the erection of the Exhibition Pavilions. On the ground around the Cathedral House, a number of light framed sheds were erected, these were roofed with corrugated iron and thorough roof drainage provided for. The sheds were tastefully decorated with hangings and festoons of white, red and blue drapery. They were bound together with a very simple but effective frontage; terminating at each end in Italian pillared porticos, plain, yet dignified in appearance, and bearing at one end the British Royal Arms, and at the other those of His Highness the Maharajah of Mysore. These porticos formed the main entrances to the building. Cathedral House was used for offices; for the display of the finer and more expensive textiles, silverware and jewellery, ivorywares and the fine arts exhibits; while furniture, etc., found place in the verandahs.

In the Pavilions proper, most of the exhibits were arranged upon planked stalls erected in tiers along and around the wooden pillars; and against a background of various hangings, most of which were exhibits.

The larger exhibits stood by themselves. As far as practicable, and with indeed few exceptions, goods were displayed according to their classes, which made it possible for visitors to make comparisons between similar productions from different parts of the country.

Machinery, Agricultural and Industrial Implements were mostly displayed in the grounds.

Through the liberality of His Highness the Maharajah of Mysore, more than a fourth of the Pavilion was placed at the disposal of the Mysore Committee. The exhibits from that State were most interesting, varied, and comprehensive. The Court was in charge of State officials specially deputed for the purpose.

The Opening Ceremony by His Highness the Maharajah of Mysore took place on the morning of the 26th of December. We extract the ***Madras Mail's*** report of the proceedings.

A very large and distinguished gathering assembled, this morning, at "Cathedral House," Mount Road, to witness the formal opening, by H. H. the Maharajah of Mysore, of the Madras Industrial and Arts Exhibition. The open space in front of the Exhibition Pavilion was laid out for the accommodation of spectators and distinguished visitors. A beautiful pandal was erected at the main entrance to the Pavilion under which were present the following :—H. H. the Raja of Cochin, Sir S. Subramania Iyer, the Hon'ble the Maharajah of Bobbili, the Right Rev. the Lord Bishop of Madras, the Hon'ble Mr. Justice Benson, Sir George Arbuthnot, the Hon'ble Mr. Justice Boddam, the Hon'ble Sir V. Bashyam Iyengar, the Hon'ble Mr. Murray Hammick, the Hon'ble Mr. Justice Russell, the Hon'ble Mr. H. A. Sim, Mr. H. Bradley, the Most Rev. Archbishop Colgan, the Hon'ble Mr. A. E. Castlestuart Stuart, Mr. L. M. Wynch, the Hon'ble Mr. J. P. Wallis, Mr. Eardley Norton, Mr. V. P. Madhava Rao, Mr. Shangarasubbiar, Mr. D. W. G. Cowie, Mr. N. Subba Rao, Mr. W. E. Clark, Mr. C. Vijiaraghava Chariar, the Hon'ble Mr. C. Srinivasa Rao, Mr. P. Ananda Charlu, the Hon'ble Mr. M. Krishna Nair, Mr. Alfred Chatterton, Dewan Bahadur P. Rajaratna Moodelliar, Mr. G. Subramania Iyer, the Hon'ble Mr. C. Sankaran Nair, Mr. A. G. Cardew, Mr. Edgar Thurston, Mr. S. D. Pears, Rajah Venugopal Bahadur, the Rev. Dr. Miller, Sir Manavikrama Ettan Rajah, the Hon'ble Mr. R. N. Paragasa Moodelliar, Mr. K. R. V. Krishna Rao, Zemindar of Polavaram, Rao Bahadur C. Jambulinga Moodelliar, Mr. K. P. Sankara Menon, the Hon'ble Mr. K. Vasudeva Iyengar, Rajah Rungaiyappa Rao of Nuzvid, the Jaghirdar of Arni, Mr. N. Pattabhi Rama Rao, Mr. N. Subramaniam, Mr. K. Naraina Rao, Mr. C. B. Simpson, Mr. H. T. Harris, Mr. D. M. Mittra, Mr. Sibthorpe, Mr. J. W. Coombes, Mr. M. Viraraghavachariar, Mr.

M. R. Ramakrishna Iyer, Mr. D. V. Hanumantha Rao, Mr. M. Arbuthnot, Mr. C. Sowden, Mr. L. E. Kirwan, Mr. R. Ramachandra Rao, Mr. V. C. Desika Chariar, Mr. E. I. Shadbolt, Mr. W. F. Grahame, Mr. C. Karunakara Menon, Mr. V. Krishnaswami Iyer, Mr. P. R. Sundara Iyer, Mr. C. Krishnan, Mr. V. P. deRozario, Mr. M. O. Parthasarathy Iyengar, Rao Bahadur M. Audinarayaniah, Rao Bahadur M. Ranga Chariar, Rao Bahadur M. Singara Chariar, Mr. R. A. Srinivasa Iyengar and many others.

Arrival of the Maharajah of Mysore.

Punctually at 8 A.M. H. H. the Maharajah of Mysore accompanied by H. H. the Yuvaraj, Mr. Aga Khan, Sir P. N. Krishnamurthi, Mr. E. Maconochie, Mr. M. Kantharaja Urs, Mr. M. Lakshmi Kantharaja Urs, and Mr. P. Raghavendra Rao, arrived at Cathedral House, and was met and received by a deputation of the members of the Exhibition Committee, headed by the Hon'ble Mr. C. Sankaran Nair and conducted to the pandal where H. H. the Maharajah, the Yuvaraj and H. H. the Rajah of Cochin were given seats of honour on the dais.

Mr. Sankaran Nair's Speech.

The Hon'ble Mr. Sankaran Nair, President of the Committee, in requesting H. H. the Maharajah to declare the Exhibition open, spoke as follows :—

Your Highnesses, Ladies and Gentlemen,—As the President of the Industrial Exhibition Committee, it is my great privilege on this interesting and important occasion to request Your Highness the Maharajah of Mysore to graciously open the Exhibition. To all of us it is a source of gratification and pride to associate Your Highness's name with this great movement so full of encouraging possibilities for the future advancement of this country. Your Highness comes amidst us for the first time after your installation as the Sovereign of Mysore, and you come to manifest your kindly sympathy with the hopes and aspirations of the people of India in the direction of India's prosperity and well-being. We are grateful to you, Sir, for your ready condescension in doing this honour to us and in encouraging and helping us with your sympathy and your presence on this occasion. We will remember, and succeeding generations will remember, your name with gratitude and affection for your support in a matter so intimately connected with India's national prosperity. Sir, the occasion is one of peculiar interest. We have had in Madras, Exhibitions of raw products, arts and manufactures in 1855 and 1857 and other Exhibitions, mainly agricultural, all of them more or less under European supervision and management. But, Sir, this is the first Industrial Exhibition in this Presidency which has been originated, organised and carried out by the people themselves without external guidance, and we trust that any shortcomings due to our inexperience may be overlooked. The idea first originated with the Congress Committees. The movement in Madras

received the hearty support of the officials. His Excellency Lord Ampthill, when the matter was brought to his notice, signified his warm approbation and his willingness to render every help he legitimately could. He has not only subscribed to our funds and instructed the officers under his authority to afford us every assistance, but he has also endeavoured, during his tours, to enhance interest in the movement among the people by exhortation, advice and appeals to their patriotism. We have received every encouragement and help at His Excellency's hands. To him our grateful thanks are due. Our invitations to the various leading men in the Presidency were cordially received. Committees were formed in all districts, grants were voted by local bodies for the collection and delivery of the exhibits in Madras. We thank them also for their valuable assistance. The assistance rendered by the Native States can scarcely be over-estimated, and we sincerely thank them. The Committee have widely distributed leaflets explaining the advantages accruing from the Exhibition. Those who have organised this Exhibition are well aware of what is being done by our rulers for the benefit of Indian trade. The Government have availed themselves of important Exhibitions to advertise Indian goods and these always attracted attention. At Melbourne, Paris and London Exhibitions, India occupied a prominent place. The Calcutta Exhibition of 1884 was held mainly to advertise Indian goods. And from the time the Imperial Institute was established in London there have been sustained efforts to promote trade in India's commercial products. Sample collections of the specimens of products and manufactures are made and maintained both in London and Calcutta. Enquiries and investigations regarding the chemical properties, the economic uses and the commercial value of such products are made and all available information is obtained from scientific and commercial experts, and such information is published in this country. For all this, it is very doubtful whether this country has derived those benefits that may be reasonably expected. On the other hand, these Exhibitions have enabled foreign merchants to ascertain the needs of the country. They have disclosed the nature of goods in demand and the quality of the supply, and the result has been the partial or entire destruction of the indigenous industries by the inundation of the cheaper goods from the factories of Europe. The Indian commercial classes did not grasp the situation. They clung to their own old ways and they had no initiative. It is very doubtful whether they even tried to ascertain how they could keep pace with their foreign rivals. It may be that a certain class of producers and labourers have benefited, but this cannot compensate for the displacement of labour and the drain of wealth due to the importation of foreign goods. The result has been the decline of Indian arts and manufactures and there has certainly been no such industrial development as we are entitled to expect. We recognise that such result is due in great part to ourselves. Those who have received English education, imbued with Western ideas, capable of following European guidance and example in commercial methods have not devoted sufficient attention to the subject. They alone have access to that scientific knowledge which has enabled the Western

nations, through the co-operation of labour and capital, to check the growth of our industries. The annual session of the Congress brings together representatives of the educated classes from all parts of India, and one purpose of holding this Exhibition is to evoke their interest, and induce them to take such action as lies in their power to further industrial progress. They can see at this Exhibition the development of Indian industries by European skill and labour. They can realise the conditon and progress of local industries under Indian management and suggest, with the help of European experts, lines of future progress. We thus hope by means of this and similar Exhibitions to enlist the sympathy, ensure the support of the educated classes of the country and thus to secure the active co-operation of all classes, European and Indian alike, interested in the industrial progress. The manufacturers in our midst of both classes may, it is hoped, be able to hold their own in friendly rivalry with the outsider. How far our hopes and expectations will be realised it is impossible to say. It is, however, our earnest hope that this movement, of which the Exhibition is only a small beginning, may lead to great industrial progress, find employment for thousands of people, reduce the pressure on land, and alleviate, if not prevent, the horrors of famine.

H. H. THE MAHARAJAH'S ADDRESS.

H. H. The Maharajah of Mysore said :—

MR. PRESIDENT, LADIES AND GENTLEMEN,—It was not without diffidence that I accepted the invitation, so courteously extended to me by the Committee, to open the Madras Industrial and Arts Exhibition. I could not but feel that there were many others more obviously qualified for the duty, whether as captains of industry, administrators of experience, or as spokesmen of public opinion. But, as it was evident that the Committee were not in search of instruction from an expert, I could not but conclude that they desired the sympathy of a representative of my class, or of the head of a State which may claim a substantial interest, not only in the indigenous arts and crafts, but also in the more progressive enterprises of Western origin. Of my official sympathy I had already been able to give expression, when sanctioning the proposal of my Dewan and Council, to send a representative collection of objects of Mysore Art and Industry to the Exhibition, and, in view of the considerations to which I have referred, I felt that I could not decline the opportunity of evincing my personal interest by taking part in to-day's ceremony. In some quarters doubts have, I believe, been expressed of the utility of Exhibitions such as this. In early days extravagant expectations were formed of their possibilities, and the great London Exhibition of 1851 was, at the time, supposed to have inaugurated the millennium. The 50 years or so that have lapsed since then have not witnessed the realisation of this pleasing vision, nor have the "World's Fairs" of Europe and the West always fulfilled the expectations of their promoters, in immediate and startling expansions of trade and industries, in general or particular. Our Exhibition here, however, is on a more modest scale, and our expectations of its results are modest in proportion.

In these days of keen competition much is heard in all parts of the Empire of what pessimists term, the decadence of British trade and industries, which others prefer to regard as the legitimate and natural advance of foreign rivals in the markets of the world. Whatever the correct description of the trouble, the symptoms are beyond question and everywhere the need of increased commercial and industrial activity is proclaimed and acknowledged. Here, in India, the problem is peculiar. Our trade tends steadily to expand, and it is possible, as we know from the Parliamentary reports, to demonstrate by statistics, the increasing prosperity of the country generally. On the other hand, we in India, know that the ancient indigenous handicrafts are decaying, that the fabrics for which India was renowned in the past are supplanted by the products of Western looms, and that our industries are not displaying that renewed vitality, which will enable them to compete successfully in the home or the foreign market. The cultivator on the margin of subsistence remains a starveling cultivator, the educated man seeks Government employment, or the readily available profession of a lawyer, whilst the belated artisan works on the lines marked out for him by his fore-fathers, for a return that barely keeps body and soul together. It is said that India is dependent on agriculture and must always remain so. That may be so, but there can, I venture to think, be little doubt that the solution of the ever-recurring famine problem is to be found, not merely in the improvement of agriculture, the cheapening of loans, or the more equitable distribution of taxation, but still more, in the removal from the land to industrial pursuits of a great portion of those, who, at the best, gain but a miserable subsistence, and on the slighest failure of the season are thrown on public charity. It is time for us in India to be up and doing ; new markets must be found, new methods adopted and new handicrafts developed, whilst the educated unemployed, no less than the skilled and unskilled labourers, all those, in fact, whose precarious means of livelihood is a standing menace to the well-being of the State, must find employment in re-organised and progressive industries. That educated opinion is awakening to the situation, this Exhibition I take to be aproof. The cry for commercial and industrial education increases, and in this education such Exhibitions are an important feature.

The subject of industrial education has many prophets, there must be many in the present assembly who are eminently qualified to discuss it, of whom I cannot claim to be one, and I do not propose to inflict on you, at any length, such views as I may have been tempted to form. Some attention has, however, been paid to the subject in Mysore, and it has only brought into prominence the great difficulties which must be faced before positive results can be achieved. Possibly our experience is not without its parallels, even in Madras. But that, to my mind, is no reason for discouragement. The old saying that the man who never made a mistake, never made anything, holds good pre-eminently in matters industrial. The time and trouble devoted to experiment have not been wasted, and it is reasonable to hope that all over India the Governments are profiting by past failure and are gradually directing

such instruction, as they are able to afford, on to sounder and better lines. The prime essential is that the instructor should know more about the industry than those whom he undertakes to teach, a condition that has by no means invariably been fulfilled. Our object is, I take it, to find new callings for those whose hereditary employment, from various causes, no longer provides a livelihood, and increased efficiency for those whose wares are still in demand, but at a price which does not remunerate the craftsman. At present, in too many cases, a boy, attracted by a scholarship, spends some years in an industrial school, and, on leaving, has no idea beyond returning to the ancestral calling, clerkly or menial, or to the hereditary tools and methods. So long as this state of things prevails, we have advanced but little on the road to success. It seems to me, that want we what is more outside light and assistance from those interested in industries. Our schools should not be left entirely to officials, who are either fully occupied with their other duties or whose ideas are prone, in the nature of things, to run in official grooves. I should like to see all those who "think" and "know," giving us their active assistance, and not merely their criticism of our results. It is not Governments or forms of Government that have made the great industrial nations, but the spirit of the people and the energy of one and all working to a common end.

To return to the Exhibition, the object of Industrial Exhibitions is, I conceive, to convey to the public, evidence of the condition and progress of local industries and to suggest to those interested latent possibilities of improvement. Madras may claim to be a peculiarly suitable locality for such an Exhibition. Not only is the Presidency noted for the excellence of its hand-woven goods, for the skilfulness of its metal workers and for its pre-eminence in the leather tanning industry, but the City of Madras has also seen the birth of a completely new industry, which promises to be a source of no little profit in the future. When the trade of copper and brass workers was threatened by an import of cheap and suitable aluminium vessels, Madras set itself to work and, with the assistance of Government, developed, by the skill of its artisans, a local industry in aluminium goods, which has now advanced well beyond the experimental stage. The development of the Madras aluminium industry affords a lesson of unrivalled import and is a hopeful augury for the future of industrial India. The systematic examination of the great Indian handicrafts for the purpose of introducing improvements, which may form the basis of industrial training, has yet to be undertaken. The necessity for it has attracted attention in many parts of India. In the Bombay Presidency an expert in weaving has made important improvements in the warping and weaving of cotton goods on the indigenous loom. In Bengal and elsewhere systematic attempts are being made to disseminate a knowledge of the use of the fly-shuttle, which, as I am informed, has been quietly at work here in Madras City, for many years, unknown to the rest of India. In Bangalore, a small factory equipped and maintained by my friend, Mr. Tata, is steadily improving the process of silk-reeling. Numerous other examples might, no doubt, be cited, but much, very much, remains to be done

in the matter, which is so vital a one for India. Now that the country forms one market with the great industrial countries of the world, her citizens must not sit idely by, awaiting the interference of the Governments in what is, equally, the business of the people. Combination and enterprise are needed. The handicrafts of India have been celebrated since time immemorial, the hereditary aptitude of her artisans survives, waiting but to be utilised in the light of modern knowledge. An Exhibition such as this will have been of small purpose if it fails to suggest new methods for developing the skill of the workers, new fields for their employment, and new markets for their products. Let us hope that the successful experiment, which has secured for India the manufacture of aluminium goods, may be the forerunner of more far-reaching developments in many other handicrafts. May this Exhibition serve as a stimulus to public-spirited men to set on foot similar enterprises, so that by combination, investigation and experiment, the way may be cleared for a progress, of which the Exhibitions of the future will illustrate the happy results.

His Highness, who was then garlanded, proceeded to open the Exhibition by drawing the curtains which closed the entrance to the Pavillion. The Maharajah was then conducted into the Exhibition by the members of the Committee and spent an hour and a half in inspecting the exceedingly interesting and valuable collection of exhibits from various parts of the country, not the least valuable and interesting of which is that representing the products and industries of his own State.

INTRODUCTION.

In connection with the first great Exhibition of 1851, His Royal Highness the late Prince Consort writing to Lord Canning in acknowledgment of the closing Report, said :—

"Let us return our humble and hearty thanks to Almighty God for the blessings He has vouchsafed to our labours, and let us all earnestly pray that that Divine Providence which has so benignantly watched over and shielded this illustration of Nature's productions, conceived by human intellect, and fashioned by human skill, may still protect us, and may grant that the interchange of knowledge, resulting from the meeting of enlightened peoples in friendly rivalry, may be dispersed far and wide; and thus by showing us all our mutual dependence upon each other, be the happy means of promoting unity amongst men, and bring in peace and good will to all mankind."

The Committee believe that in some small degree at any rate, the recent Madras Exhibition has furthered the pious wish expressed so long ago by Albert the Good. Producer and consumer were brought into contact, men saw often new and cheaper methods of attaining the same results, vendors found new markets for their goods, buyers and artizans found new forms, patterns, qualities and ideas. The Committee feel they are justified in claiming that no more truly representative Exhibition of the manufactures and the industries of a Province has ever been held in India. Beside this, very large and interesting collections of manufactures from every other province in India were exhibited side by side with Madras industries, and, especially in textiles, silver wares and wood-carving, much to the advantage of this Presidency. Madras Industries and Agriculture were far more thoroughly represented in the late Exhibition than at the one held under the auspices of His Excellency the Right Hon'ble Lord Harris, Governor of Madras, in February 1857, when all the weight of authority and the resources of Government were brought to bear both on the officials and the people.

The Committee claim that this, the third Exhibition under the auspices of the National Congress, has been larger and more comprehensive than those that have gone before. There is no reflection in this statement upon the organisers of the two former excellent Exhibitions; is not a beautiful mother often overshadowed by a still more beautiful daughter, whose very beauties are largely the gifts of the mother herself? And so this Madras Exhibition has, up to the present, been the best and fairest offspring of the Congress. With an energetic and thorough-going President in the person of the Hon'ble Mr. Sankaran Nair

who has laboured in and out of season ; with a helpful and paternal Government such as that of Lord Ampthill has proved itself to us, and with able, persevering, and indefatigable Secretaries and Treasurer, the success of the Exhibition was never in doubt for a single moment.

The sympathetic orders of Government gave impetus to all efforts in connection with the work of securing exhibits ; Collectors, Judges of Districts, Local Boards, Engineers, Municipalities, Superintendents of Jails, Tahsildars, all, with some exceptions, vied with each another in collecting exhibits of every description from the commonest toys to the most valuable and interesting articles available, and in assisting in every way.

Rajahs, Nawabs, Zemindars, Dewans and others, threw themselves heart and soul into the work and selected their choicest and best.

The grateful thanks of the Committee are specially due to the several local Exhibition Committees and their Secretaries, the members of almost all these were indefatigable in their efforts to secure exhibits of all kinds ; and to their hearty voluntary efforts much of the success of the Exhibition is due. These gentlemen are responsible for large collections in money, as well as the securing, listing, packing, and forwarding of exhibits.

There were over 17,000 exhibits catalogued.

Visitors to the Exhibition, omitting all holders of duty or Exhibitors passes, numbered between sixty and seventy thousand. These figures would have been considerately higher but for the heavy rains at the end of December, which kept away numbers of people from the surrounding Districts who would otherwise have visited the Exhibition.

The Exhibition was at first limited to exhibits from the Madras Presidency and Mysore, but when applications began to come in from almost every Province and State in India, the Committee felt compelled to open their Pavilions to the whole country, with the result that exhibits came from Bengal, Rajputana, Bombay, the United Provinces, the Punjab, Assam, Burmah, Sind, Central India, the Central Provinces, Orissa, Guzerat, Kathiawar, the Dekkan, Maharastra, Kashmir, Baroda, Upper, Lower Northern and Eastern Bengal, Baluchistan, etc.

About the middle of November exhibits began to pour in and the Secretaries were put to great straits to house and safeguard them, this stream of goods for display continued until after the Exhibition was opened, with the result that in some classes, space was found insufficient and things on some of the stalls got rather

crowded. In spite of everything being displayed openly on the stalls and stands, there were no thefts, and the total compensation paid for lost or missing goods has only amounted to Rs. 138-3-2. This satisfactory state of things is due to the organisation and thorough watch maintained, especially by the Volunteers in charge of stalls, for whose yeoman labours the Committee are most grateful. These young gentlemen, by their intelligent aid, did a great deal to make the show popular, taking as they did, great pains to explain the nature of the goods in their charge to everybody—open-mouthed, gaping country-folk, as well as the higher classes.

It was most unfortunate that unprecedentedly heavy rains set in on the morning of the 28th December, and lasted till the 31st, but thanks to the wise forethought of the Committee, and the thorough work done by Rao Sahib T. Namberumal Chetty, one of the members of the Committee with the help of Rai Bahadur T. Rathnasabapathy Pillay, retired Executive Engineer, practically no damage was done by the rain to any of the exhibits, and the compensation paid by the Committee on account of such injury, only amounted to Rs. 3.

The following Classification was adopted for the Exhibition :—

Group I. Machinery.

Steam, gas, oil and air engines, boilers, pumps, aeromotors, water-turbines, water-wheels, water-lifts.

Hydraulic and screw presses, hand presses, oil presses, printing presses, colour-printing machines, calico-printing machines, sugar-cane presses, machines for preparing tea, coffee, cotton, wool and other fibres for the market, ice machines, ærated water machines, etc.

Sawing, plaining and drilling machines, lathes, weaving machines, sewing machines, bending and doubling machines, warping machines, knitting machines, embroidery machines, looms.

Other machines not specified above.

Group II. Mechanical Contrivances and Machine Accessories.

Cranes, pulleys, brakes, ploughs and other agricultural implements, punkah wheels, mills, dice, vices, water taps, valves, grinding wheels.

Lamps, stoves, stills, fountains, incubators, dessicators, condensers, evaporators, filters, centrifugal machines, weighing machines, automatic machines.

Tools and implements for blacksmiths, coppersmiths, goldsmiths, tinsmiths and other metal workers, carpenters, plumbers, turners, stone workers, miners, glass workers, etc.

Belting ropes, lubricants, pipes hoses, sharpening stones, polishing stones and powders, etc.

Not included in the above classes.

Group III. Electricity.

Electric engines, dynamos, electro-gilding, electro-typing, and electric lighting plant, batteries.

Telephones, telegraphic instruments, insulated wires, switches, electric bells, electric punkahs, fans, insulators, automatic signals, electric furnaces.

Not included in the above classes.

Group IV. Instruments.

Surgical, mathematical, surveying and other scientific instruments, microscopes, telescopes, binoculars, spectacles, watches, clocks, etc.

Musical instruments.

Not included in the above classes.

Group V. Materials used in Construction and Mineral products.

Timbers of various kinds.

Stones, both artificial and natural, cements, bricks, tiles, marbles, asphalt and other flooring materials.

Ores, coal, mica, magnesite, asbestos, clays, crystals, salts, gold bearing quartz, emery.

Not included in the above classes.

Group VI. Textile Fabrics.

Yarns of cotton, silk, wool, flax, hemp, plantain and other fibres white and dyed.
Gold and silver thread and imitation gold and silver thread.
Cotton, silk and woollen cloths made from other fibres, rugs, blankets, cumblies, table cloths, carpets, shawls.
Gold and silver lace cloths.
Hosiery, gold, silver and silk embroidery, knittted work, crochet work, bead work.
Weaving, dyeing, calico-printing processes.
Cocoanut fibre, coir ropes, mats, etc.
Grass mats.
Not included in the above classes.

Group VII. Vegetable and Animal Products.

Grains, pulse, fruits, vegetables, flowers, etc.
Tea, coffee, cocoa, cardamom, ginger, sugar (raw and refined), etc.
Tobacco, cigarettes, cheroots, etc.
Medicinal drugs, dyes, barks, gums, resins, fibres, honey, wax, sandal-wood, grasses, currystuffs, nuts, etc.
Oil seeds and oils, cocotine, fats, butter, ghee, cheese, preserved milk.
Preserved food and provisions, jams, jellies, flours, preserved fruits, chutneys, curry powders, etc.
Confectionery.
Spirits.
Not included in the above classes.

Group VIII. Leather, Horn and Paper.

Leather, tanned, varnished, etc , tanning processes.
Leather goods, boots, saddles, book bindings, etc.
Horn goods.

Group IX. Pottery, Porcelain and Glass.

Enamelled and painted pottery, porcelain, pipes, vessels, etc.
Plaster work, modelling, figures, casts, vases.
Glass.
Not included in the above class.

Group X. Metals.

Castings.
Brass, bronze, German silver and other alloys, lead, tin and aluminium ware.
Iron ware, cutlery, hardware, etc.
Copper vessels, wires.
Locks, hinges, safes, nails, etc.
Turned and engraved work, hammered ware, inlaid work, etc.
Fancy metal goods, enamelled ware.

Group X. Metals—(*Continued*).

Silver and gold work, jewellery plain and set with precious stones, precious stones, pearls, etc.

Not included in the above classes.

Group XI. Chemical Industries.

Attars, perfumes, perfumed oils, powders, cosmetics.

Medicines, essences.

Paints, varnishes, pastes, glues, enamels, chemicals, inks.

Candles, soaps, matches, bleaching powders, fire extinguishers, manures.

Not included in the above classes.

Group XII. Furniture and Decorations.

Furniture, carved-wood work, upholstery.

Screens, curtains, corner pieces, marble work, brackets, artificial flowers, boxes.

Not included in the above classes.

Group XIII. Fine Arts.

Paintings, drawings, etchings, crayon work and oil work, statuary, photography, stained glass work and imitations of it, crystoleum painting, ornamental pith work, engravings, woodcuts, ferro-type, zincography.

Ornamental carving in ivory, wood, sandalwood, stone, glass, cocoanut shell, etc.

Inlaid work in marble, soapstone, wood, etc.

Group XIV. Miscellaneous.

Rare books, oriental manuscripts and granthas.

Vehicles, carriages, rickshaws, bicycles, motor bicycles, motor cars, and their accessories.

Articles of personal wear.

Sporting goods and toys, walking sticks.

Basket work, cane work, bamboo work, grass and leaf work, wax work, rubber goods, shell work.

Artificial preparations of wastes of different industries.

Mounting of birds and heads of animals, skins of wild animals.

Group I. Machinery: II. Mechanical Contrivances and Machine Accessories and III. Electricity. It is unfortunate that the Machinery class was not better represented. There was very little shown that was not already well known in the Presidency.

Messrs. D. Raju & Co., of the Victoria Works, San Thome, sent in an excellent oil mill on the pestle and mortar principle, and worked by a simple and good oil engine, they also exhibited a very sound water-lift, sugar and cane mills, etc.

Messrs. Massey & Co. (Ld.) of Madras sent a Hornsby Oil Engine and Centrifugal pump which may be thus described :—

The Plant exhibited is intended as a typical example of a small engine and pump suitable for general irrigation purposes.

The engine is of the simplest form and is easily managed, will burn *either kerosine or liquid fuel* and requires no lamp to keep the ignition tube hot while running. Every drop of oil consumed after starting is employed to generate power, and once started the engine requires no attention beyond replenishing the supply of oil in the reservoir when needed, and occasionally filling the lubricators. The engine cylinder is cooled by means of water circulation taken direct from the pump discharge; and the total weight of the plant is thus very materially reduced.

The Pump is of the centrifugal pattern of the most approved design, and is fitted with foot valve and strainer, fast and loose pulleys with striking gear enabling the pump to be started and stopped independently of the engine.

We quote below a few figures which may prove of interest relative to this plant, which consists of a 2½ H.P. oil engine and a 3 inch centrifugal pump lifting 260 gallons of water per minute to a height of 10 feet.

According to Professor Chatterton an acre of paddy requires approximately ¼ inch or 5,600 gallons of water in 24 hours. This plant is therefore capable of irrigating

Approx.	2¾	acres	with	¼	inch	water	in	10	hours.
,,	1½	,,	,,	½	,,	,,	,,	,,	,,
,,	1	acre	,,	¼	,,	,,	,,	,,	,,
,,	½	,,	,,	1	,,	,,	,,	,,	,,

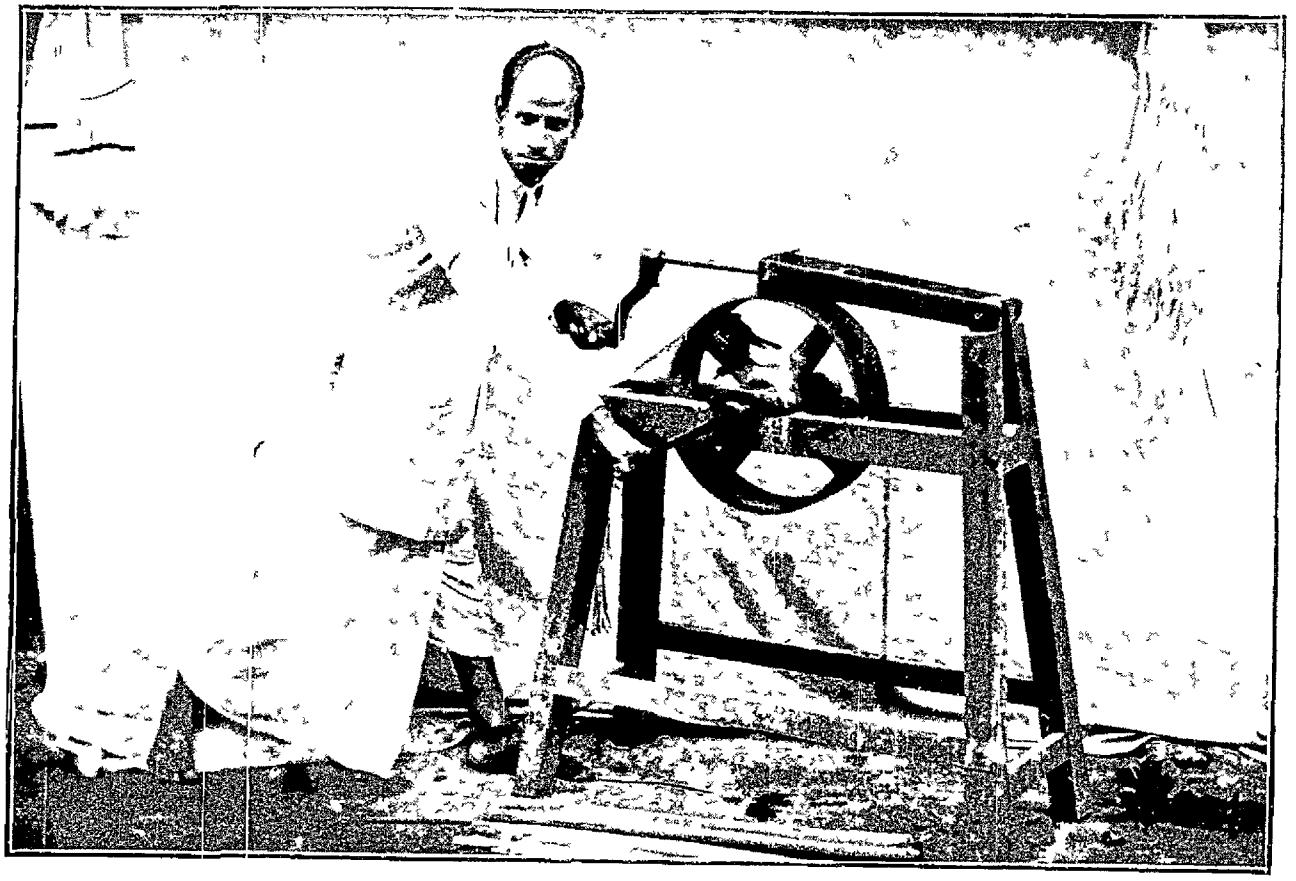
Messrs. Massey & Co. state that the cost of running this plant inclusive of *all charges* and using *kerosine oil*, will not exceed Rs. 2 per day of 10 hours; or if burning *liquid fuel* Rs. 1-6-0 only. It is therefore possible to irrigate 2¾ acres for one month at a total cost, if engine is burning kerosine oil, of Rs. 60 and if engine is burning liquid fuel, of Rs. 42.

This pump worked throughout the Exhibition period; the agriculturalists who came in from the districts were much attracted by it, and stood by hundreds around it discussing its merits and demerits. It is understood that soon after the Exhibition Mr. Kuttambakara Ratnasabapati Mudaliar, a landholder in Madras who saw the plant

at work, purchased a 2½ H. P. Engine and pump from Messrs. Massey & Co. and has since been very successfully working it in his garden near the Tiruvattur toll gate.

At the other end of the Gardens, Mr. Proudlock, Curator of the Government Botanical Gardens and Parks, Nilgiris, exhibited several forms of a most simple apparatus for extracting plantain fibre, and of which ryots were frequently observed taking rough sketches and measurements. This industry has of late been attracting much public attention and many are experimenting in this direction. There were also exhibits of similar and simple machines for the same purpose from Mr. A. G. Ganapathi Aiyer of Tanjore and the Superintendent of the Cannanore Jail. Mr. Proudlock's exhibit is perhaps the simplest and most easily made. It consists of two poles firmly fixed in the ground, carrying a crossbeam over them. About the middle there is a strong blunt-edged iron knife which bites firmly and evenly on to a flat iron plate secured to the beam. The knife has a long handle with which it is raised and depressed, the plantain stalk is laid on the sole plate and the whole of it except sufficient for the hand to grasp is drawn between the plate and the knife edge which presses lightly on it all the while. All parts of the stalk except the fibre are thus removed and the fibre is quickly cleaned at the rate of about a stalk per minute, the portion first held by the hand is the last to be made into a continuous string of fibre by being reversed and passed through the machine. The Superintendent of Cannanore Jail sent a model machine of much the same type, and as he very prudently valued it at a single rupee, many orders have been registered for copies. A good pattern of fibre stripper also came from Travancore. The plantain refuse after extracting the fibre might prove of some value either as manure or for some other useful purpose, and samples have been sent to the Chemical Examiner to Government with a view to ascertaining its economic value. The Cannanore Jail is making strong bags, coarse canvas clothes and ropes from this fibre for jail use. Cloths woven from these fibres are reported on in Section VI. Textiles. The Mysore Section exhibited plantain fibres prepared by similar processes.

D. Vijiayachetty, Iron Manufacturer, Mysore, exhibited sugar-cane mills of a useful description and very cheap. The mill is of the simplest, being worked by the rotation of two-toothed cylinders against each other, the cylinders being moved with a wheel by hand power. This firm was established in 1887 for the manufacture of these mills, and it is said to be doing a very large business in the State and in adjacent British Districts. The Mysore Section also exhibits a country cotton ginning machine. It consists of



Mr A. G. Ganapathy Iyer's Plantain Fibre Extractor.

two-toothed cylinders in gear, moved by a hand wheel, the cleaned cotton passing out from one side and the seed by the other. An appliance much like this is found in all the Districts of the Presidency in which cotton is grown in any quantity. Jadiappa of Mysore sent a good carpenter's plane in very good finish. There was little to distinguish it from well-made imported planes. Mr. C. K. Subba Rau, B.A., of Saidapet, sent a lift for raising water by tread power. It is claimed that it discharges a pair of buckets per second into the reservoir. By way of comparison, a single mhote water-lift was fitted up beside it, but as the two lifts were not working with any arrangement to show practical results, the comparison is valueless. It is Mr. Subba Rau's intention to apply tread power for the working of sugar-cane crushing mills. Water-lifts somewhat similar to that described are said to be in use in the Karur and Bhavani Taluks of the Coimbatore District, and perhaps a comparison of Mr. Subba Rau's new lift with those already in use may lead to some improvements. The Agricultural Farm at Saidapet sent English and Canadian ploughs, hoes, harrows, chaff-cutters, seed drills, etc., and also a winnowing machine. These are all simple in construction, easily repaired by local labour, and would be found valuable acquisitions to any agriculturalist taking them up. The American chaff-cutter is specially worthy of attention, being most simply made and economic in use.

Amongst the many simple agricultural implements exhibited, seed drills sent by the Industrial Exhibition Committee, Cuddapah, and the Tahsildar of Adoni deserve special mention. This implement is also in use in Bellary, and is well worthy of adoption in Districts where it is not now known. The Madras School of Arts sent chrome-tanned water mhotes. As chrome-tanning renders the leather water-proof and tough, these should last much longer than the ordinary country-tanned mhote.

The Madras School of Arts also exhibited three fly-shuttle looms in regular work, one weaving the celebrated Madras handkerchief, another, with a forty-five inch reed space, was weaving *angavastrams* of fine count, the third was a three-yard turban loom. One of the special advantages of the fly-shuttle was very clearly demonstrated in this broad loom worked by one man, for the native loom producing cloths of this width requires two weavers to pass the shuttle across. All these looms bore English-made healds and reeds.

Messrs. K. S. Rungachari and Kuppusamy Iyer, both of Madura, each sent a novel hand loom for weaving bordered cloths in highly decorative effects. In that sent by Mr. Rangachari, a crank shaft operated on by treadles, works two iron cylinders. The pegs on

these cylinders are arranged according to the pattern being woven, and, acting on levers, they manipulate the thread required for the decoration of the border. This is called "the special loop" system. In Mr. Kuppusamy's loom, which is patented, the threads for weaving ornaments are raised or lowered by a jacquard harness operated on by a lever at the top, and worked by hand, the principle being rather similar to that of the looms for weaving *kinkhabs*.

Mr. Kelkar of Indore exhibited and worked a large fly-shuttle loom of English pattern, for the weaving of honey-comb towels. The distinguishing feature claimed for this is in the form of warp beam used on it. Usually, the warp yarn passes through three different processes before it is ready to set it up in the loom, winding, warping, and sizing; the ordinary weaver, all over India, does this by hand, using many simple time-tried appliances, as winding by means of a hand wheel, warping by stretching the thread in zig-zag fashion over pegs, driven into the ground, or set into an oblong block of wood. These old processes, although excellent in their way, involve much time and labour. Mr. Kelkar's idea is to simplify all these by the use of simple inexpensive appliances, and to give the weaver the warp ready prepared for the loom. So far as one can see, Mr. Kelkar's loom and scheme, though each is good in its way, have little of novelty in them.

Messrs. Binny & Co., agents of the Carnatic and Buckingham Mills Cos., displayed an excellent power loom as used in their mills. It is unfortunate that arrangements to supply power for this could not be made. Mofussil weavers took a great interest in it, and were unanimous in their wishes to see it working.

That excellent institution, the Kala Bhavan of Baroda, (probably, after Bombay, the best and most up to date School of Technology in India) exhibited a cast iron sewage destroyer. There is a receiver into which the sewage passes. It is there mixed with water, and conducted by a tube to a reservoir in the centre of a hollowed cylinder at a much lower level. A liquid bacilli preparation—which is supplied at a nominal price—is thrown into the cylinder, and by chemical action, the sewage is destroyed, passing off into harmless water and volatile gases!! It is claimed that all solid substances are devoured and rendered innocuous by the bacilli. At the bottom of the cylinder, is a tap for letting off the innocuous water and at the top a high tube permits the gases to pass off as generated. The water may be collected and used as a valuable manure.

The Pudukkotah State sent two specimens of a curious water-lift or basket. These are made from the stem of the palmyra tree. The

value of this arrangement lies in its extreme cheapness, rare durability, and water-holding capacity. Like hydraulic cement this increases in hardness the longer it remains on the water, and it is said to get stronger as it increases in age. The mode of preparation is peculiar. A thick-stemmed, well-rooted palmyra tree is cut down, leaving only a foot or so of the stem projecting above ground. This stem with the roots is then dug up bodily, and hollowed out, thus forming a big pot-shaped vessel with solid sides about an inch thick. To strengthen it, the upper edge of the pot is given an iron plate ring. The vessel thus formed holds twice the quantity of water contained in the usual iron water-lift pot. At first the roots hang to the vessel, but by constant use, they fall away and a pot of this kind which has been in use for some years becomes quite smooth outside and all appearance of the roots is lost. But in place of the roots appear numbers of small projections or knots cunningly arranged in artistic patterns. These vessels cost only a couple of rupees each. The Chairman of the Gwalior Municipality sent a punkah moving by clock work and actuated by a balance weight. It works for about half an hour, and is another attempt to solve the great self-working punkah question.

The Poona College of Civil Engineering exhibited a neat and well-made orrery for exhibiting the motions, relative magnitudes, and distances of the larger bodies contained in our solar system. The revolutions of the planets, day and night, eclipses, etc., were all well illustrated.

The Shivaji Metal Works of Sholapur sent several appliances for filtering and heating water. They were well made and finished. It is claimed for them that all the heat generated is utilised without any waste and that thus much fuel is saved.

Messrs. Deschamps & Co., Madras, sent an excellent and scientifically constructed hydro-incubator of their own design. It is said to be most successful in the hatching of eggs by artificial heat, that it works on simple principles, and that its construction is such that it cannot get out of order. A hen usually sits on from 10 to 14 eggs and rarely succeeds in hatching more than 9 or 10 of them. In this incubator from a hundred to a hundred and fifty eggs can be placed at the same time, and if care is taken in selection, almost every egg will be hatched. The old process for supplying artificial heat by a lamp inside the incubator is now out of date, and in the one exhibited, heat was provided and maintained at a uniform temperature throughout the process by means of hot water It is said that once started, the only care required is in seeing that the

doors are opened morning and evening, so as to thoroughly ventilate the egg chamber. The hatching is done in nineteen days instead of twenty-one under the hen. Appavu Asari of the Madura Technical Institute exhibited an automatic commode. This was on scientific lines, and provides for thoroughly disinfecting the contents. The inventor is to be congratulated on his ingenuity. Subbaji of Cocanada sent a strong, useful and ingeniously devised drilling machine of his own invention.

Messrs. Veerabhadra Nayak and Amruthalinga Nayak of Madras, exhibited models of good revolving water-lifts, in patterns which are already in use in Salem and other parts of the Presidency. The Shivaji Metal Works, Sholapur, sent a model of a useful iron water-lift complete with buckets. Mr. A. Plumbe, of Madras, displayed an interesting and soundly made model of a steam engine. The Dewan of Cochin sent a good model of water wheel. Rao Sahib Namberumal Chetty, the well-known Contractor, had a truck running on a small section of Mono rail line, which he is anxious to introduce into the Presidency for feeder tram lines or Railways.

Dairy farming is an industry that has made rapid strides in Bombay, and Bombay butter is favourably known all over India, in East Africa, the Straits, and even in China and Japan. It is astonishing that so few natives of the Madras and Bengal Presidencies have taken up this most profitable industry. The machinery required is very simple and the cost comparatively low. The Agricultural Farm of Saidapet, and Messrs. Rangaraju Bros. of Madras, Dairymen, exhibited their butter making twice daily, to the great satisfaction of large numbers of mofussil visitors, who had neither seen nor heard of "butter by machinery" until they visited the Exhibition. The process is roughly as follows: As soon as the cows have been milked the milk is strained and passed through the "cream separator." This has on top of it a reservoir for the milk called "the receiver." As the milk is poured in, the cream is drawn out of it by centrifugal force and passes into a chamber, while the milk, exhausted of fat, but still good milk, is run off into vessels placed to collect it. In Madras, the cream usually takes about 18 hours to ripen. In colder climates the time required for this process may be anything up to 30 or 40 hours. When the cream is ripe, it is placed in a cask-shaped vessel called "the churn." This revolves on its centres with considerable speed, and the agitation of the cream to convert it into butter is considerably assisted by "dashers," which move inside the churn. The formation of the butter can be seen through an eye glass in the churn. After the butter has "come," a tap in churn is opened and the butter milk allowed to run out. Fresh cold

water is run into the churn and the butter thoroughly agitated until the water runs clear. The butter is then removed from the churn by special implements and placed in a "butter drier." This is another centrifugal machine which removes every particle of water from it, as it is found that butter without water keeps much better and tastes far sweeter than if the water is left in. The first milk separated from the cream is excellent food for children and invalids, being peculiarly digestible. It may be observed that from first to last this butter is untouched by hand and that the mode of preparation is most cleanly and scientific. Ghee made from machine butter is practically without sediment, and will keep sweet for years. From a Hindu point of view, dairy farming is not only unobjectionable, but even most decent and praiseworthy, for, it must be remembered that this is an industry peculiarly sacred to the memory of Sri Kristna Himself.

R. N. Loganatha Mudaliar of the Arni Estate, J. R. Amrita Lampacholi of Madras and Mr. Siquira sent good working models of various water-lifts which need no special comment. The Secretary of the Exhibition Committee, Ambasumudram, sent several kinds of agricultural implements and a useful water baler.

There was but one exhibit under **Group III. Electricity.** Messrs. Deschamps & Co., Madras, exhibited their new and improved loud speaking office telephone. Telephone installations are still in their infancy in India, especially so in the Madras Presidency. Beyond the Presidency towns, there does not appear to be a single public telephone installation in the country. In the larger business centres, there should be a considerable field for the establishment of public telephones; and it seems strange that no Indian Companies have been started to supply this want. There are many comparatively cheap patterns of loud speaking telephones in existence, so that given a demand, the transmission of speech for five or six miles, and even up to 50 miles or further, should be easy of accomplishment.

Group IV. Instruments:—The instruments exhibited formed a small, and unfortunately not very representative class. The Kala Bhavan of Baroda sent an excellent set of tools and appliances used for watch-making. The Baroda State has always been well to the front in its thorough encouragement of local and imported industries. This State sent one Mr. Lahar to Switzerland to study the art of watch maufacture. He was away for five years and has now returned to Baroda and taken charge of the Department of "iron works," in the Kala Bhavan. He is now manufacturing watches there, and has

imported, or made locally, most of the various tools and appliances used in the manufacture and repair of watches. The very interesting collection of these exhibited in the Pavilion illustrated what an Indian can do if he has the opportunity of securing suitable training. The brass parallel rulers made in the Kala Bhavan were beautifully finished, and apparently quite equal to imported ones from the leading scientific instrument-makers in Europe.

Two of the most beautiful exhibits in the Exhibition were the elephant goads "ankus," sent by the Rajah of Ettyapuram. These are in cut steel, and are most exquisitely carved out of the solid block of metal. It is unfortunate that no effort has been made to train students in this very artistic work. one of the goads is quite new, and there should be no difficulty in getting the artist who made it to teach his methods to others.

Several well-made musical instruments such as harmoniums, violins, Veenas, Ayamandal, Rudraveenas, Sarada Manohari, Satars, etc., were sent in by a number of exhibitors ; most of them were well finished and got up, and tastefully decorated in mother of pearl or ivory, or incised decoration in gold or color. There were also some well-made metronomes adjusted for Indian music.

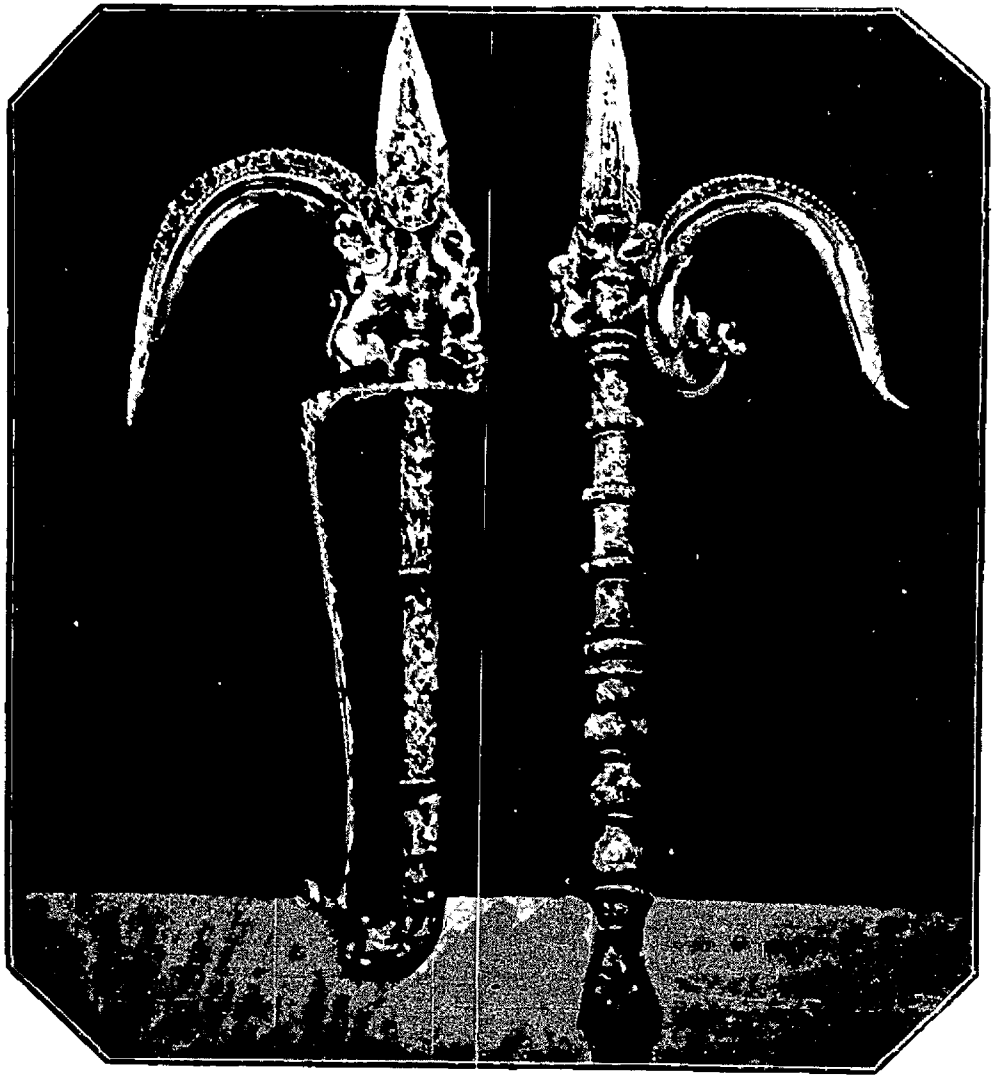
With the Hindu, as with all other cultured races, music has ever been a specially favoured art. The very Vedas of his worship are measured musical chants. The Sâma Gâna or literally, the sing song chant, is only another name for the Sama Veda. Sri Kristna, who is specially the God of the peoples, is constantly depicted playing on his flute and charming all animate nature. From time immemorial, India has been devoted to her own music, and new and ingenious forms of musical instruments are constantly being invented.

Give a Hindu musician any form of European musical instrument and he will promptly adapt it to his own tones and style of playing.

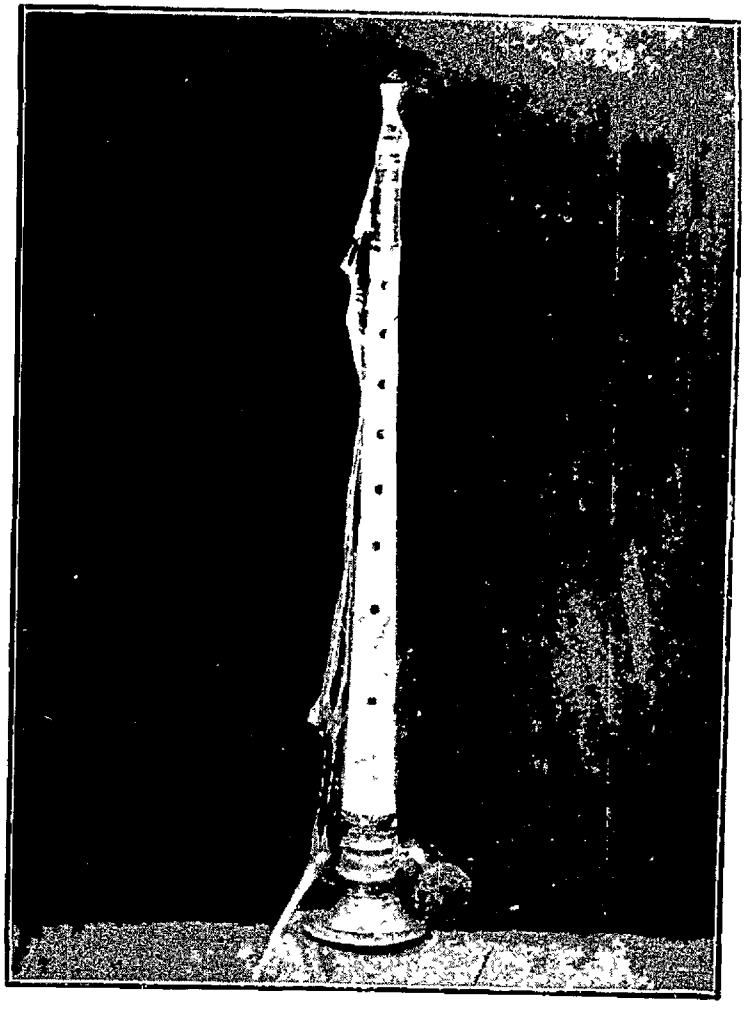
The violin was a purely European instrument—an evolution of course from the bowed Ektara of fabulous antiquity,—but it was never, until of recent years, adopted by Indians. The Hindu, especially in Southern India, has now made it his own, with often slight modifications in form and stringing to adapt it to his special uses.

Places in the Madras Presidency specially noted for the manufacture of purely Indian musical instruments are Tanjore, Mysore, Malabar and Pudukkotah. The instruments used by Indians made may be divided into :—

1. Those of percussion, as drums, kettle drums, tambourines, cymbals, castanets,



Cut steel Elephant Goads from Ettayapuram.



Nagasaram from Ettayapuram.

2. Wind instruments with and without reeds, as the Kombu, Neeva, and Nagaswaram,
3. Stringed instruments as the Ektara, Veena, Rudraveena, Satar, violin, etc.,
4. Keyed instruments, as harmoniums, dwarkinflute, etc.

The Ambasamudram Committee sent a kettle drum made from the great hollowed section of a tree trunk, and covered with strong hides on both sides. Among the finest tambourines exhibited, is one from Mysore, a state which has always been famous in India for tambourines and drums. The one under notice was made by Mr. Rangasamy Iyer and is very tastefully decorated with ivory inlay.

The Kombu is either S or half-moon shaped and a curious specimen of this is sent by the Mangalore Committee. The bamboo from which it is made is claimed to have been grown for this particular instrument by the tutelary God of music!

A number of exhibitors sent excellently made Nagaswarams in several varieties. All of these were very full and deep toned. Some were in plain wood, others in wood decorated and mounted with silver. The Veena is the best type of stringed Indian musical instrument extant. It is one of the oldest instruments of Bharatavarsha, and is specially familiar to all Hindus, as forming the most graceful of instruments in the beautiful hands of Sarasvati, the goddess of learning. The sages of old time chanted Sama hymns in praise of the Gods and invoking their aid and countenance to the accompaniment of this instrument. Tetan Râvana played sacred hymns on it, and thus succeeded in appeasing Rudra, the most irascible of Gods, after he had found that his own great physical strength was of no avail alone.

The Mysore State, the Dewan of Pudukkotah, the Rajah of Ettayapuram, K. Srinivasulu Naidu of Madras, exhibited the best Veenas in the Exhibition. They were all more or less inlaid with a profusion of ivory in graceful and delicate patterns, and are all highly finished. That sent by Mr. K. Srinivasulu Naidu is claimed to be a form of Veena to the improvement of which he has devoted his whole life. He has entirely done away with the pegs, which in old instruments worked loose and constantly gave trouble, and has introduced in place of them some key holes, the strings being tightened by the winding of a key. These key holes are in the centre of beams which carry the strings or wires. Violoncellos, banjoes, and bass viols are similarly keyed.

One Ananta Puttayya of Sirsi, North Canara, sent an enormous Rudra Veena. This instrument is probably so named on account of its very sonorous tone, and the deep vibrations of its long strings.

In connection with stringed instruments, it may be well to mention that the steel wires made in Mysore have been famous all over India for centuries, and still maintain then popularity, in spite of the introduction of cheap European-made wires. There are two famous experts in Mysore—Mariappasary and Mustan Sahib of Chennapatna. Their wires are often exported to European countries, being, it is said, required by leading musicians for producing certain special effects in stringed instruments. But the majority of their business is done in India and their expensive wires are well-known from Cape Comorin to Peshawar. Messrs. Mundul & Co., Calcutta, Muthuswamy Asari of Kumbakonam and Mr. Cowasji Mistri of Bombay exhibited a number of harmoniums made for both English and Indian music. Messrs. Mundul & Co., also exhibited a book-shaped harmonium, a dulcetinea and other instruments of similar kind. Muthuswamy Asari's harmonium has been designed with special reference to Indian music, and his frequent performances on it in the Pavilion were received with much applause.

Ayamandali—a boat-like musical instrument—with metal plates of various kinds and sizes slung across it, is a modification of one of the oldest Indian instruments, Jalatarangi or "the playing of music by striking with a wand a series of metal cups, filled to various heights with water, and slung on a curved frame." This was doubtless the Indian form of the water Harmonica still popular in parts of Germany. The Ayamandali sent by the Dewan of Pudukkotah was interesting and attracted considerable attention.

Messrs. N. Powell & Co., surgical instrument and artificial limb makers, of Byculla, Bombay, sent a very handsome case filled with surgical instruments, appliances of all kinds, artificial limbs, etc., everything exhibited being claimed to be of their own make. This firm's manufacture compares favourably with much of the same class sent out from Europe. At the Paris Exhibition of 1900, they earned a first class medal in competition with the leading surgical instrument makers of the world. The Secretary to the British Royal Commission in notifying them of this, said, "The jury were much pleased with the quality and finish of your instruments and I am pleased to state that they have awarded you a medal." They earned a gold medal at the Ahmedabad Exhibition of 1901, in spite of complaints that the instruments were not really manufactured in India, for they were able to prove, upon the testimony of eminent surgeons in Bombay, that their instruments, from forging to finishing, were made at their own factory in Byculla.

Messrs. S. Narayana Rau & Sons of Bangalore sent three well-made clocks of their own manufacture.

Surgical Instruments.

Group V. Materials used in Construction, Ores, and Mineral Produce:—The States of Mysore, Cochin and Pudukkotah, the Exhibition Committees of Coconada, Godavari, Madura, Malabar, Ambasamudram, the Tahsildar of Anantapur Mr. Coelho, and the Conservators of Forests, Madras, Mangalore and Coimbatore sent a number of collections of specimens of Indian timber. The Dewan of Cochin sent some very fine samples of jackwood planks.

Messrs. Nandlal Nijjar & Co. of Chamba, Panjab, exhibited a very good specimen of walnut timber. There does not appear to have been any serious attempt made to introduce this valuable tree into Southern India. The wood is durable and valuable for most purposes, and is in beautiful colour and markings. The nut gives an excellent oil for all domestic purposes, and is in itself a nourishing and palatable article of food which is acceptable to all races and castes. There appears to be no reason why the walnut should not be extensively cultivated in the hills in Southern India. It grows fairly quickly, and will do well at any elevation of over 3,500 feet.

Some of the rarest samples of timber and fibre came from Cochin. Mysore, and Malabar. The former sent two magnificent slabs of rosewood and teak cut across the tree. These trees would give apparently, clean working planks over seven feet wide. The slabs exhibited were sound, and flawless right into the heart. Cochin exhibited good and curious specimens of mats, fibres and ropes in very considerable variety.

The Mysore exhibit of timber was a very complete one. In the catalogue, many of the timbers are described according to their fitness for building, carpentry, joinery, well-curbs, fuel and other economic purposes. A similar descriptive account, prepared by experts, of all the timbers shown in the Exhibition, would have been of considerable value. The Cuddapah Exhibition Committee sent a good collection of the stones from that district, some in the rough, some chiselled and others polished. These illustrated the great value and variety of Cuddapah stones for building purposes. Mr. A. E. C. Vas of Mangalore sent laterite, granites and other stones from that district. Much of this stone is exported to Bombay by sea, where it is largely used for the building of the many beautiful edifices which are springing up so rapidly in that city. The Mysore State departments sent a very representative collection of the many valuable building stones, marbles, etc., found there. Many of the marbles especially are, in the opinion of the writer, worthy of notice, by dealers, workers in such goods, and architects both in and out of India. The Forest Ranger and other exhibitors from the South Arcot District displayed

soap stone, and cream, blue and grey pot-stones, in fine and coarse grain, and the Mysore Public Works and Palace Departments exhibited these worked up for decorative and building purposes. Groups of figure objects, in panels, cornices, lattices, friezes, window and door sills and frames in fine carving, and in very beautiful forms both in Indian and European architectural styles.

It is unfortunate that more attention has not been given to the many fine building stones found in the Presidency, many of them within easy reach of Madras. The solitary exception in the city to the all brick, or mixed stone and brick style of building is the Young Men's Christian Association premises, which have been entirely and very effectively built of gneiss stone. Soap stone in combination with Cuddapah or other local stones would give most effective and not over expensive results, and a great advantage in the use of steatites is the ease with which they lend themselves to carving. The Pudukkotah State sent some fine samples of granite slabs, partly polished, from the famous Tirumiyan's quarries. This is very hard and even textured, and therefore specially adapted for building purposes. There is little doubt that the famous old temples of Tanjore, Tiruvâlûr and Avadaiyar Kovil were built from stones obtained from these quarries—Tirumiyan being the nearest source from which such granite can be obtained. The great mansions of the richest Nattukottai Chettys—a class of money-lenders who are proverbial for investing large amounts in house-building—are even now built of stones obtained from these quarries.

The use of well-carved figures of Divinities, animals, birds, etc., as forming part of the decorative scheme of houses and temples, and the fine carving in pillars, door-ways, windows, architraves, lintels, archways, cornices and supports for eaves, beams, etc., appears to be fast dying out in India, and is being supplanted by the ordinary and ugly lime plastered buildings, roofed with Mangalore tiles, or, with the cheaper, hotter, and still uglier galvanised iron sheeting. It is only in the Native States, and for the few wealthy "old style" Indians that good carved stone houses are now built.

The Mysore State appears to be maintaining the best traditions of Indian architecture, if we may judge by the stone work referred to above, and by the beautiful door frames, doors, pillars, etc., made and carved out of blackwood, teak, sandalwood, and ebony, often inlaid with ivory or whitewood, and in some cases decorated with repousse worked silver panels. It is perhaps unfortunate that some of the mouldings in this beautiful work have been polished to a

Part of the Mysore Court.

glass-like surface, which detracts from, rather than adds to its beauty. The designing of the decorative details in the whole of these Mysore exhibits is specially good, and the designer and his superiors appear to be altogether free from the Public Works idea of "constant repetition of a decorative pattern for economy's sake." Figures of Hindu Gods, fabled mythical animals, Indian creepers, indeed everything decorative, a perfect wealth of variety and ornament, designed and carved by Mysore artists, seems to have run riot all over the exhibits, and the work is as true and perfect in technique, as its details are graceful and artistic. It is only a great Prince with a deep purse, and beyond this, a real artistic sense of beauty and some knowledge of decorative detail who can attain these results.

The Pudukkotah State exhibited samples of excellent lime and of machine-made bricks. These of course, good as they are, cannot compare with the manufactures of the Basel Mission and Henke's Tile Works in Malabar and South Canara. The exhibits of both these concerns would compare really well with European pottery and terra-cotta wares. Your Reporter asked both concerns for a descriptive list of exhibits and a brief note upon their industry. Only Messrs. Henke & Co. have replied. They tell us they are manufacturers of Glazed Stone Ware Pipes and other fittings, Glazed wall Tiles. Marble Terrazzo and Encaustic Flooring Tiles, Terra-cotta and Mosaic Clay Flooring Tiles, Henke's Hourdi Bricks, Fire Bricks, Vitrified Bricks, Hollow Bricks, Ornamental Bricks, Roofing Tiles, Henke's Patent Ceiling Tiles, Shield Tiles, Ridges, Ventilators, Skylights, Finials, Art Pottery, etc., they exhibited a very representative collection of these manufactures and won the highest award of a Gold medal. Their extensive Tile Works were commenced in 1891, and, after many additions, completed in 1901. They are situated on the grounds of the old Phoenix Iron Works at Feroke, on the Beypore River, near Calicut. They burn all materials in circular Kilns "Hoffmanns System," turning out uniform make and perfect colour, thus securing a decided superiority for their products.

Henke's Roofing Tile "Model 1901:" This latest pattern of roofing tile has received the emphatic approval of many Engineers for its good points. It gives quick drainage from every part, and its close fitting side groove prevents drip and the fall of dust into the room below. It lies evenly and firmly on the roof, owing to the depth of the socket which receives the curved ends of the over lapping tile. It is securely hung on the reeper by its flat-sided ledge. It can easily be wired to the roof by a special attachment.

The name "Henke's Tile Works, Feroke," is neatly embossed on one side. It is slightly heavier than the ordinary "Mangalore" tile

made all over the west coast, but this is more than made up for by the gain in area.

Henke's Patent Ceiling Tiles: Patent received for original design and improvement over existing patterns. The tile hangs between the reepers, giving sufficient space to allow the air to freely circulate. This is manufactured in two patterns to fit "Mangalore" and "Model 1901" roofing tiles. The tile is ornamented with a beautiful design in bright terra-cotta colour, the effect produced is excellent.

Henke's Ornamental Tesselated and Terrazzo Marble Flooring Tiles: To produce a good and durable flooring tile from various cements, in bright and tastefully arranged colours, is difficult, and needs expert knowledge, and careful selection of materials. Henke's tiles are manufactured from the very best materials, and they claim that theirs is the only factory using steam power for making these tiles, a pressure of 250,000 lbs. per tile being employed. Henke's tiles are manufactured in every variety of colour and design.

Henke's "Hourdi Bricks" Or Hollow slabs for Terrace Roofs: are manufactured in two sizes of 2 ft. × 8½" × 3" and 3ft. × 8½" × 3". A cool light roof and a great saving are effected in the woodwork, mortar, and labour. The slabs are divided into four parts throughout their length by partitions of strong terra-cotta, thus combining lightness with strength. When laid, the slabs are pointed with cement and covered with 2 or 3 layers of flat tiles set in mortar, after which a layer of chunam concrete, say 2 inches thick, is applied and the top plastered. *Glazed stone-ware Pipes*: are manufactured in all sizes from 2 ins. to 39¼ ins. inside diameter, for irrigation water-supply and drainage purposes. The Pipes made at Feroke are second to none in respect of strength, durability and quality.

The Basel Mission fictile exhibit was also a very good one, comprising as it did Mangalore tiles in the old, and several new forms, wall and dado tiles, vitrified and Hollow brick, Hourdi bricks, fire bricks, drain pipes, shield tiles, ceiling tiles, plain and decorated ridges, grotesque ornamental finials, roof discharge pipes, ventilating tiles, skylight tiles, tesselated, terrazzo, and other decorative flooring tiles in great variety of pattern and colour, fountains, gargoyles, cornices, frieze tiles, and many other exhibits too numerous to detail. The colour, finish, and ring of the wares sent by both the above concerns was very good, and the judges must have had some difficulty in making their award. There were a number of exhibits from other tile manufacturers on the Malabar Coast. Those from J. D. Rego & Sons, Metpadi and Brothers, B. S. Saldanha & Co. of Mangalore being all good, in considerable variety of form, and for a number of different uses.

A Corner in the Pottery Court.

Mr. M. S. Subramanya Aiyer and the Secretary, Exhibition Committee Trichinopoly, sent in some good tiles, which however call for no special mention. The special qualities of the clay are of course the reason for the existence in Malabar and South Canara of so many tile and pottery works. Nowhere else in India, apparently, is such a perfectly typical potter's clay found. It is unfortunate however, that no coal has been found in the vicinity of the Malabar Coast. If this had been so, the possibilities of the industry in the future would be very great. As it is, immense quantities of tiles, etc., are sent during the fair season by country vessel to Bombay, Karachi, the Persian Gulf, Aden, Ceylon, and ports in Southern India, while a great quantity of tile work is also exported by coasting steamers. It is strange that no enterprising Indian capitalists have thought it worth their while to take up and work this industry seriously. Messrs. Henke & Co. and the Basel Mission have demonstrated beyond doubt that the average Indian peasant is quite equal to the work, if he has up to date appliances and machinery, and expert supervision. There seems no reason why a few young educated Indians could not be sent to Messrs. Doulton's great Terra-cotta Works at Lambeth or some other similar factory, and be thoroughly trained in the technique of the industry.

A visit to one of the Malabar factories is most interesting. The thorough mixing of the clay is of course an important factor. In a machine worked by bullock or steam power, the clay is pounded, cut, beaten, ground, rolled, and cut again with huge knife-plates. It passes out in huge slabs which are cut into smaller ones by steel wires in another machine. These are first given form by hand or steam presses, the final finish being given by men who work with the regularity and speed of the second hand of a watch. The several other processes of drying and burning the wares are also interesting. Much economy in fuel is got by burning in closed kilns. The heat given off from the top of these is used for drying the wet fresh tiles, so that practically no heat is lost.

The pottery sent by Messrs. Burn & Co., of Calcutta, Asansol in Bengal, and Jubbalpore, was very good, but excellent as the Jubbalpore and Asansol clays are, the texture of the exhibit leads one to the conclusion that the Malabar clay is by far the best. Messrs. Burn & Co. carry on an immense business in the manufacture of glazed clay pipes, which are very largely used for drainage and water-supply schemes in Bengal, the United Provinces and Oudh, and Central Provinces. These are considerably less expensive than the Madras-made cement pipes, but are possibly not quite so durable.

It is surprising that no cement pipes from any of the local makers were sent to the Exhibition.

Khan Bahadur Walji Lalji Sait sent interesting samples of Diamond conglomerate and coal shale from Kurnool, and fine specimens of copper ore from the same district. Samples of gold bearing quartz and sand were contributed by the Richmond Gold Mining Company, Pandulur, the Kolar Gold Fields, and the Mysore Geological Department. The Exhibition Committee, Godaveri, the Conservator of Forests, Madura, Mr. M. G. Brito of Mangalore, and P. L. C. Shunmuga Chettiar of Muraiyur. The Secretary of the Exhibition Committee, Godaveri, sent specimens of rich oxide of mercury, many kinds of mica, and plumbago found in the district. From the Mysore State came an interesting series of decorative stones, cements, ores, and coal, and comprising Fuller's Earth, asbestos, asbestos in long fibre, actinolite, apatite, magnesite, antimony, stibnite, cerventite, lead, manganese, magnetic iron sand, fibrous copper sulphate, gold quartzes and schist, blue and grey potstones, limestones, soda earths, salts, porphyries, pink, green, grey, rose, brown, and red granites, trapstones, gneiss, green and haematite quartzites, and many other varieties of stones and minerals. Mr. M. G. Brito of Mangalore and the Conservator of Forests, Coimbatore, exhibited a number of samples of various ores and stones. No specimens of the manganese ore, quarried in several parts of the Presidency, were exhibited. The Exhibition Committees of Cuddapah and Kurnool displayed specimens of chalk and good slate found in those districts. The Indian Warehouse Company sent sheets of mica and samples of mica composition for boilers, steampipes, packing of iron safes, and other purposes, where a good non-conductor is needed. Mica has been long known as one of the finest existing non-conductors. Its principal uses in India hitherto have been for medicine and ornamental purposes.

Mr. M. A. Kudus Badsha Sahib of Messrs. Haji Mahomed Badsha Sahib & Co., Madras, who are the pioneers of the Mica Industry in the Presidency, Miners, Mica experts, and very large exporters of the mineral contributed a most varied and interesting collection of specimens and of articles made from mica, and illustrating thoroughly the uses to which it is, and can be put, both for ornamental and other purposes. It is claimed with good reason that no one has ever before manufactured or exhibited such articles before, and that they are therefore really novelties. The exhibit includes one hundred grades of mica in different qualities, including the rare emerald mica, and collected from different parts of the world. In itself forms quite a unique collection. Mica powders of different grade and for various industrial uses, Mica Compositions, plittings, micenites comprising mica in the matrix, and various kind of stone found in connection with it—hand painted

MICA EXHIBITS

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MICA EXHIBITS.

and printed mariner's compass dials, address cards, mica cylinders, tumblers, lamp chimneys —the value of these is obvious, for they are practically unbreakable—hanging chandeliers with 6 and 5 lights, taboots, branches of artificial flowers and foliage, ladies' companions, trays, brackets, cigar and cigarette cases, snuff boxes, spectacles (eye-preservers), paper weights, racks, a group of mica covered fancy articles, portraits of their Majesties the King-Emperor and the Queen-Empress, windows and lanterns with mica panes, and a model of a bangalow made in mica. This by no means completes the list of the articles displayed, whose names are legion. Mr. M. A. Kudus Badsha Sahib deserves much credit for the ingenuity and enterprise which has led him to adapt this mineral to so many different purposes, and we have no doubt his action in this respect will tend to develop the mica industry considerably.

The Jhind State sent an interesting specimen of shaking or flexible stone, found in the State, a similar stone is also quarried in British territory near Rewari. A good specimen of this stone may be bent considerably and the writer some years ago secured a piece for an American Museum, which measured 6½ ft. in length by a foot in width, and two inches in thickness. This could be deflected 14 inches in either direction. In this, particles of sandstone are held together by an almost pure silica in which they are imbedded. Similar shaking stone is found in the Brazils and the Hartz mountains.

The Secretary to the Revenue Board, Madras, sent a very interesting collection illustrating the various forms of salt found at the different sources in the Madras Presidency.

The Jaipore State sent a number of the well-known blue and white glazed tiles made in this city. These are much after the style of the Multan and Delhi Tile Work. They are very decorative and make excellent dadoes or cornice friezes. They are however very fragile and cannot be used in floors. It is a great pity that the beautiful old Jaipore paste in shades of turquoise and cobalt blue on a soft white ground, is steadily being transformed into a poor weak imitation of modern Persian and Multan pottery.

One cannot but lament the closing of the pottery department of the Madras School of Arts. Here was an opportunity for teaching the ordinary village potter something beyond the bare rudiment of his trade, as now known to him, and we cannot but think it would be worth while to recommence this work upon somewhat improved lines, by bringing in young and intelligent potters from the vicinity of the larger towns and putting them through courses of moulding, and fashioning, the mixing of clays and cements, the making and uses of glazes and

facings, cheap and improved methods of firing, also the making of good and decorative plain and colored floor tiles, and other forms of terra-cotta, and pottery ware for many architectural, decorative and domestic uses.

In concluding our report on this group we venture to extract the following from a newspaper report of a most interesting lecture delivered in Madras by Mr. V. S. Sambasiva Iyer, Professor of Geology in the Central College at Bangalore, on the "Mineral Industries of India."

After describing, at some length, the various minerals of economic value that were generally to be met with in India, and the mineral industries, the lecturer proceeded to sketch the possibilities for India in the field of improving her yield of the chief agricultural products by utilising a few mineral substances prepared in the form of manures for soil. About 45¼ lakhs of rupees worth of pure saltpetre was exported from India during the last official year. This was one of India's chief exports. The use of nitre was a now-a-days gradually narrowing, and it was disheartening to think that they should never see a large expansion of the trade in that substance unless indeed some entirely new and extensive use was found for it. The sodium nitrate formed from this substance was beneficial, as it supplied nitrogen to the plants. Soluble salts of lime formed in nature also served as manure. Carbonate of lime occurred in sufficient commercial quantities in most parts of India and might be utilised profitably. The preparation of sulphuric acid was intimately connected with that of mineral manure. The magnitude of the industries of any country might be gauged from its manufacture of sulphuric acid. There was, the lecturer pointed out, a highly lucrative field of enterprise for India in this direction, judging from the extent of deposits of copper pyrites that existed in this country. As an exemplification of such results, the lecturer adduced the case of Germany in recent years. The processes whereby those minerals were extracted and prepared for use constituted some of the minor mineral industries.

Metals were needed to prepare various tools or machinery, utensils, etc. Iron and steel were the two most universally and extensively needed of metals. Iron-smelting seemed to him to have first originated in this country. There were enormous deposits of iron ore in many parts of India. Want of coal, however, was a great draw-back to this industry. A small industry, however, might be started on the lines advocated by the late Dr. Dhanacoti Raju, in some forests possessing large tracts of good ore. Iron-smelting by electricity was still in an experimental stage in this country. Nearly 1½ crores of rupees worth of copper and copper manufactures were imported into India in 1893-94. There were ores of copper in the country in sufficient quality and quantity to admit of their being worked on a commercial scale. These ores occurred in Singhum, Dalbhum, in the Banka Division of the Bhagalpur District of Bengal, in the Chanda Districts of the Central Provinces, and there are, at least, three places in the Multahsil where they were formerly worked. They

are found in Rajputana and Ajmere. We wanted copper and we had a small known supply of ore in several parts of India: only means should be found to work them. There were ample traces of copper ore in Nellore. Lead and lead manufactures were imported into India to the value of 25 lakhs in 1900-01. The demand was large. Were there no lead mines in India? Were thay not utilised in ancient days? The lecturer answered these questions in the affirmative; and said that lead was largely worked in India—as was testified to by the extent of the ancient mines in Southern India, Rajputana, Baluchistan and Afghanistan. It would be profitable, said the lecturer, to work the ores in India with their money and skill. In 1858, Brigadier-General Fitzgerald reported to the Madras Government the existence of mercury in a bed of laterite at Cannanore. A large deposit of cinnabar, too, was reported at Devil's Hill, between Tellicherry and Cannanore. The world supply of tin was fast diminishing. The ore was reported to exist in the Bustar State in the Central Provinces, as well as in Hazaribagh. Platinum was nearly as costly as gold, but it was found in small quantities in the streams of the Indus valley, and in Burma. Large quantities of glass and porcelain were imported, but Kaolin may be looked for between Ternay and Kauray in the Trichinopoly District. A fine plastic clay occurred in Cuddalore and other places. Capital and business organisation alone were required, for the promotion of this industry. A home market might be created for ores of manganese, if Messrs. Tata & Sons started their proposed iron-smelting works in Central India.

India was the chief mica-producing country of the world, and there was no home demand, for its export must continue and a market be created here. Ample uses may be found for epsom salts, soapstones and potstones. The two important minerals used as abrasives—corundam and garnet—occurred in many places in India. The manufacture, and working up of cements, ochres, paints, ornamental and building stones, gems and precious stones were other industries which utilised mineral products, not to speak of gold-mining and coal-mining, for which there were great possibilities. The possibilities, and perhaps also the probabilities of India's prosperous future in the field of mineral industries were indeed very great.

The above survey had brought out certain facts prominently to view. They were (1), that there was a store of useful minerals in the Indian continent, (2) that they were of daily use to us in various ways, (3) that they were obtained by the ancients in India, (4) that the process of working and marketing them had been lost, and, lastly, that this had rendered India dependent on foreign import for most of her necessaries. What were the causes that tended to this result? The leceturer held them to be—absence of adequate communication in the days of Moslem rule, absence of peace, and the consequent want of security of life and property previous to the British occupation. The general diffusion of scientific knowledge was at an ebb in those days. The result was that these arts and industries, for which India was once famous, were now forgotten.

How then were they to proceed to utilise the mineral wealth of the country? The main initiative work might be done under the following heads :—(1) They must open the eyes of their people to the imperative need of industrial activities by means of popular vernacular accounts of such activities now going on all over the world and of India's share therein ; (2) That small museums containing the various minerals found in the neighbourhood should be established, with a view to educate the people and train up the students ; (3) That a central museum, a laboratory and a library should be established, directed by experts, and containing collections of the most important minerals of economic value, and manufactured goods from these ; and (4) That companies should eventually be floated with large capital, with a view to prospect upon and mine the materials available in different localites.

It was an axiom in Germany and America, that the best investments of money were those laid up at compound interest in the brains of their young men, where neither rust nor moth does corrupt nature. He drew the attention of his audience to the necessity of immediate action in that direction.

Leisured and wealthy Indian gentlemen might find it to their own advantage and to that of their less fortunate brethren to think seriously of their responsibility as leaders and guides of the people, and come forward with liberal offers towards creating that most important element necessary for their industrial advancement, namely, the training of their young men to grapple with the difficulties of industrial activities on a commercial scale. Whatever might have been the spirit of the people till now, a real awakening has at last taken place in the minds of some of the leaders of our society and instances are not wanting to prove this.

Mr. A. Yorke, Chairman, said :—

I quite agree that there is a vast field for Indian enterprise in the minor Mineral Industries, to which the lecturer fully referred. But for my part, I would be inclined to go even a step further, and not let attention to major industries wait until the realisation of the various wishes with regard to minor wants. I would say, give as much attention as possible also to the major industries such as coal and gold, and educate the youths of the country towards that end, simultaneously with the other end about minor industries, because you will see that coal and gold are really, although major industries in this country, very minor industries to what they ought to be, and to what most experts think they will be one day in this country. The field in both of them is still enormous. As to coal for instance, though the quality of that hitherto extracted from Indian mines is not such as to justify all the hopes of the most sanguine, still, with cheap transport, even coal of moderate quality has a wide sphere of usefulness. So with the improved railway facilities which India is steadily acquiring, there is obviously a great future for Indian coal and a great development of its mining industry may be confidently looked for.

Then as to gold. At present, judged by value extracted, it is, of course, the premier industry and an even far more important mining industry than coal.

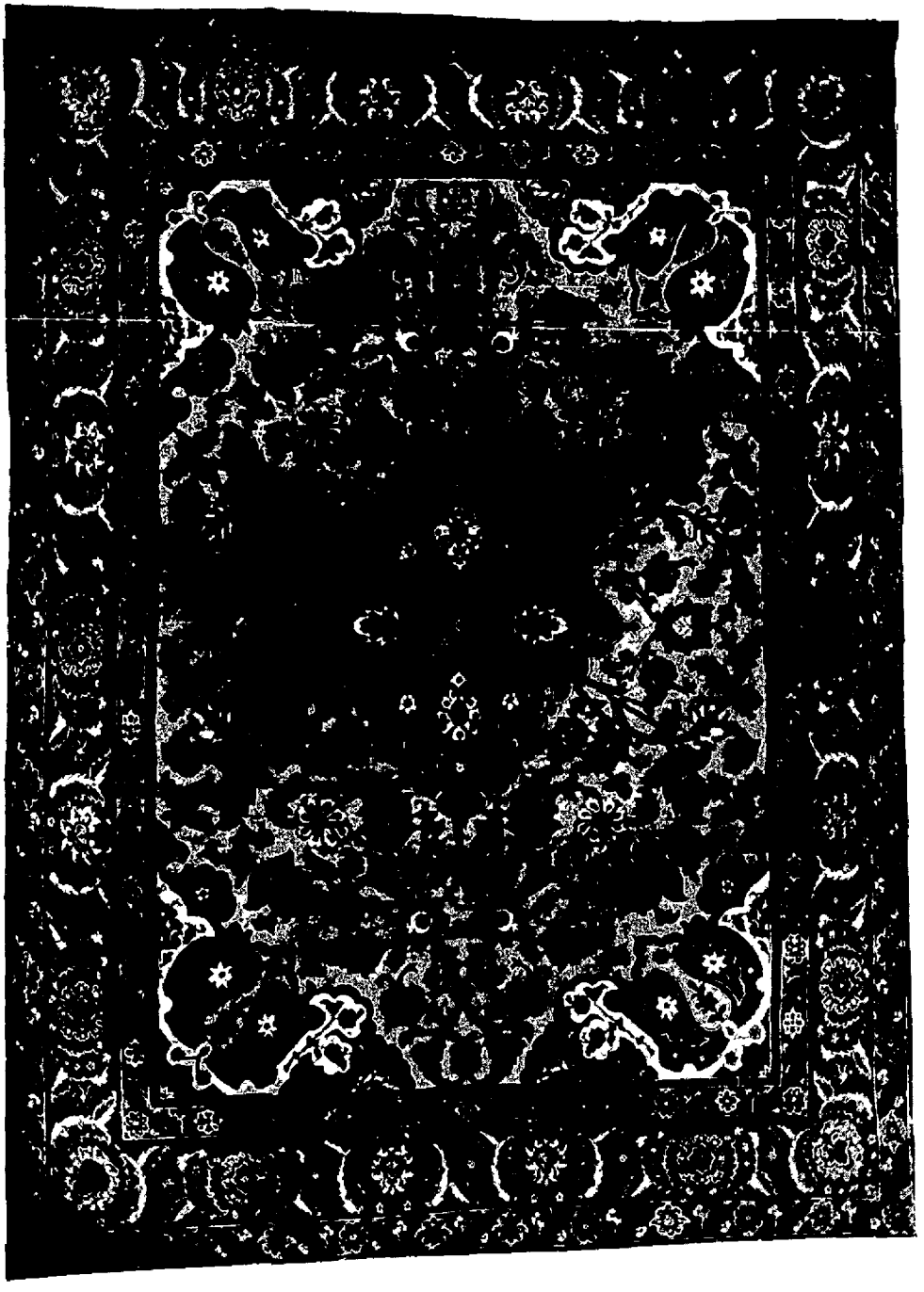
But it again is still but a minor industry, compared to what it should be, for, when the formation of gold-bearing rocks known as Dharwar rocks has been more fully explored, there is reason to think that the industry will be immensely further developed. I believe these rocks extend from Dharwar, whence they take their name, southwards down into Mysore, and North-east wards upto the Nizam's territory, and as yet they have only been explored at depth in the Kolar fields, and there as we all know the success has been wonderful. But Kolar is only an outlying patch of the formation, which extends, I understand from Dharwar, and the general public has scarcely yet realised that the promising reports recently received form the newly opened mines at Dharwar and Hutti, confirm Kolar, and indicate that rich ore at depth may be reasonably counted on wherever, on the formation, old workings show that the ancients found gold. Since old workings are to be found on many parts of the formation, North-eastwards from Dharwar to beyond Raichur, the possibilities of the field are immense. I would therefore urge the desirability of cultivating not only the minor Mineral Industries which Mr. Sambasiva Iyer has so suggestively put forward, put also of paying more attention to the major ones equally lying to hand in India. To work towards this end this suggestion of mine is more or less on the same lines as the suggestion made by Mr. Sambasiva Iyer. What I think is wanted is a mining school, such as exists in England at Camborne in Cornwall (and perhaps elsewhere) where mining is taught both scientifically and practically above ground, in an extensive and well-found school and laboratory, and underground, in a mine acquired for the purpose, and equipped as a model mine. I believe it was a disused mine, yet it is just as useful as any other for the purpose of showing the people all the underground work at the same time, so that a youth of 17 or so, after he has finished his ordinary education—I don't advocate any boy scamping his education and going into a technical branch too soon—but, as soon as he has acquired a more or less liberal education in letters, he may take a technical line and be thoroughly grounded in it. If you have a large number of students going through a college of that sort, you will eventually find interest taken in these mineral pursuits which at present is not dreamt of, and then you will realise the hope which Mr. Sambasiva Iyer has expressed and which I quite echo. I was very pleased to hear the lecturer say that the manufacture of sulphuric acid, or at least the production of sulphuric acid, may be taken as a sort of measure of the civilization of the country and he said that India was very much behindhand in it. It is very very much behind and I am sure he will be glad to hear that Madras is at least taking a new departure in this direction, and that a factory for the manufacture of sulphuric acid is now being started in North Arcot.

Group VI.—Textile Fabrics. The Exhibition, so far as the section devoted to textile fabrics was concerned, brought to light the feeble attempt of the country toward commercial success in hand-woven cotton goods of the finer counts, showed that in these limited efforts Madras was still pre-eminent, and that there are great possibilities still existing for the hand-loom industry. Side by side with the very many good examples displayed in various textiles, there were a number of specimens of gaudy-coloured goods of weak design, colour, and quality, poor imitations of art-fabrics and European textiles. Why, then, do people stand with folded arms and look at a declining industry *in which there is money*, without any attempt to in a practical way revive the trade? What is wanted is initiative direction and capital, and unless the centres of art-industry,—where there is still good work going on—are protected and helped, Indian textile art of the best class must soon be a thing of the past. Already a change for the worse is visible in the tastes of the common people, and one has only to go into any street or village near a large town, to see the glaring printed coloured cloths of Manchester or German production freely won by the populace. These are rapidly taking the place of the beautiful white and tinted cloths of hand-loom work, so lately in general use all over India, and so much of which was, until the middle of the nineteenth century, exported to various countries.

Thoughtful observers remark that India, with her store of cotton so near at hand, should be among the foremost of textile producing countries and there is no reason why this should not be, if the cotton be decently cultivated and the many indigenous varieties improved. Intensive cultivation should supplement much of the extensive cultivation, and more attention should be paid to the selection of seed for planting. Good cotton will result in finer counts being spun, which will not only check the imports of fine yarn, but will make many of the Indian mills paying concerns, and in a limited period of time Indian piece goods and fine-woven stuffs should come to the front with a good market before her very doors.

There is a also bright future for such fibres as ramie, aloe and pine-apple, because they possess properties which make them valuable and eminently useful for textile purposes. But the same remark cannot be applied to the plantain-fibre, unless it be possible to subject the material to such further treatment as would render it softer for use in the weaving of cloths for wearing apparel. At present, it is only fit for making ropes, cordage and sacking.

Our chief concern, however, lies with the vast community of hand-loom weavers who carry on their operations in villages and in their



Madras-made Pile Carpet.

own homes all over Southern India. They manage to eke out a livelihood, but as a class they are sunk in poverty and heavily indebted.

The hand-weaving problem, that affects millions of the inhabitants of India, remains an unsolved difficulty, partly owing to foreign competition, partly to the poverty of the weaving community, and partly to the lack of enterprise in this direction among wealthy merchants; but still one hopeful sign is abroad, *viz.*, the interest taken in the discussions that have attended the re-introduction of the fly-shuttle, and the coming of the Japanese looms, which promise to slightly improve the condtition of the weaver.

There is still a future for the hand-loom, but only in regard to those goods which cannot be woven on the power-loom, as for example, the Madras Handkerchief, the Angavastram and the Sari. Efforts should be made in this direction to improve the prospects of the hand-loom weaver. It is possible to devise some plan for selling yarn, ready sized and beamed into required lengths, to individual weavers. In this Presidency, Coimbatore seems to be a suitable place for starting such a mill. Other mills might hereafter be started in convenient centres, each devoting itself to a special class of work, say either coloured or grey.

But this is not enough. The weaver must be given a better loom, which will demand greater skill and intelligence to work and which will, in proportion, bring him in higher wages.

In the Southern Presidency, there is a great demand for the Madras Handkerchief which can hardly be met. There is money in the business, and weavers should be encouraged and instructed to make these goods. At present, the weaving of them is only confined to certain districts, and the only firms that appear to have done anything to really extend and develop the trade are Messrs. Haji Muhomed Badsha Sahib & Co. and Beardsell & Co. These goods are sent to London where they are sold by auction, and then exported to Africa to meet the needs of emigrants from India, and of the Arab community. Other merchants might well take up the trade, with profit to themselves and to the country, and export the roomals direct to Africa and so avoid giving them two sea voyages, instead of one, and saving at least one profit or commission.

The value of these goods exported in 1902-03 was Rs. 6,87,309 and in 1903-04 Rs. 7,01,010. The weaver is indebted for most of his cotton yarn to Manchester and other Spinning centres in Lancashire, for the mills in India are almost all engaged in spinning coarse counts. Coloured twist is also largely exported from England; but as a rule the weaver dyes his own yarn, with either vegetable, alizarine, or aniline

dyes, the two latter are steadily increasing in use. The quantity of these dyes imported in 1902-03 was 65,742 lbs ; in 1903-04 76,266 lbs. The quantity of coloured yarn imported in 1902-03 was 6,184,791 lbs. and in 1903-04 4,103,170 lbs. It is a mistake to suppose that fast shades cannot be obtained from coal-tar colours. Any degree of fastness can be produced, only expense is involved in the process, and a thorough knowledge of the technique of dying is required.

Much improvement can be effected in the Indian method of dyeing, for there is now no attempt made to practise economy, or to use exact quantities. The bath that has once been used for dyeing a certain quantity of material is thrown away, without any effort to use it by bringing it up to strength again. What is required is a few dye-houses, where large quantities of material may be scientifically and economically dyed and where the people may be instructed to use quick and modern methods of work.

In dyeing indigo-blue, the Indian fills several pots, generally six, with about 1 viss of indigo, 1 measure of Thagavarai leaves (Cassia Tora). A vat before use is allowed to ferment for 10 days with sediment obtained from an old vat. Lime is added as required from time to time to keep up alkalinity. The dyer dips a quantity of yarn which depends on the count, after wetting it. The material is allowed to remain for a minute and then squeezed and dried. This is known as the 'first dip.' For deeper shades the yarn is allowed to remain in a heap for the night, it is then dried and dipped into still stronger vats.

For a scarlet dye, tinned cochineal is used, for to one seer of the material, half a seer of the powder is taken, ¼ seer of postukkai, and a tola of turmeric. These three are well ground into a paste to which water is added and the bleached twist is dipped into it. After a few minutes, it is taken out, rinsed and dried. The bath is then heated to boiling point and the rinsed twist is dipped into it and allowed to remain for 24 hours in a gradually cooling bath. It is then washed in running water, until the colour ceases to bleed. The process is repeated two or three times. Other colours are fixed in the same tedious way.

India not only produces cotton, but is one of the chief silk producing countries of the world, and sericulture offers a good opening to small capitalists.

To reel the silk, the cocoons are placed in hot water for 10 minutes. From 18 to 25 threads are taken, and run through a guide of brass-wire on to a reel fixed to a pair of cross-sticks of bamboo. Two, three or four reels are then taken with the yarn wound round them and

the ends are brought together and twisted into singles by the spinning wheel to form skeins.

Tata's silk experimental farm in Mysore sent a most instructive collection of cocoons, silk threads and stuffs connected with them, the most curious being a silk teapoy cover spun by the silkworms themselves ; this extraordinary effect being obtained by placing the worms upon a tray, and swinging it steadily and continuously after the threads had been crossed all over the tray, this is interesting, although not instructive. The whole exhibit, however, shows nothing of the result of the late Mr. Tata's expensive experiments to introduce the Japanese silk worm into India. The production of silk from these worms is, we believe, five times greater than that of the Indian, and the silk is of a better texture. Moreover, it is stated that the Japanese worm is healthier, and less liable to silk worm disease, it also breeds faster.

In Bengal the silk industry has been a real live one for centuries past. The East India Company from the commencement of its work in Bengal, shipped huge quantities of silk cloths and raw silk to Europe. Of late years, the weaving of silk cloths in Bengal appears to have declined, but the rearing of silk worms, and exports of raw silk are well maintained.

Silk filature work has been carried on in Kashmir for a number of years. It is only since about 1895, that silk has been worked on a large scale in that State. A department of Sericulture has been formed, under the direction of an expert trained in Bengal. Large cocoon spinning factories have been erected, thousands of mulberry trees planted all over the State, and provision made for the microscopic examination *of every silk worm's egg imported from Europe*, so as to eliminate all possible chances of the silk worm disease, which has done so much to injure the industry. The silk department in Kashmir is rapidly becoming one of the greatest sources of revenue to the State. Silk has been from time immemorial a state monopoly in Kashmir, and this is still vigorously maintained, but the new rules of the Sericultural Department are as reasonable and favourable to the peasant as they are to the State, and the result is that the people are taking keenly to the industry, which is spreading rapidly in all directions.

If the silk raising industry has proved itself a success to producer, middleman, and shipper in Bengal, why cannot attempts be made to reintroduce it on a large scale into the Madras Presidency ? The mulberry will grow anywhere on the Indian plains ; the fruit of some varieties, especially the " King " or " shahtoot," is edible and delicious as a sherbet, and comes at a time when juicy fruit is welcome and little available.

The system of egg examination is quickly learnt, and facilities are given for instruction by the Bengal Government at their silk head-quarters near Murshidabad. Coimbatore and Mysore appear to be the only parts of Southern India where silk is now reared in any quantity.

The decay of silk raising in the Southern Presidency appears to have been due to the silkworm sickness, and to ignorance and neglect of the necessary and simple measures required to stamp out this disease.

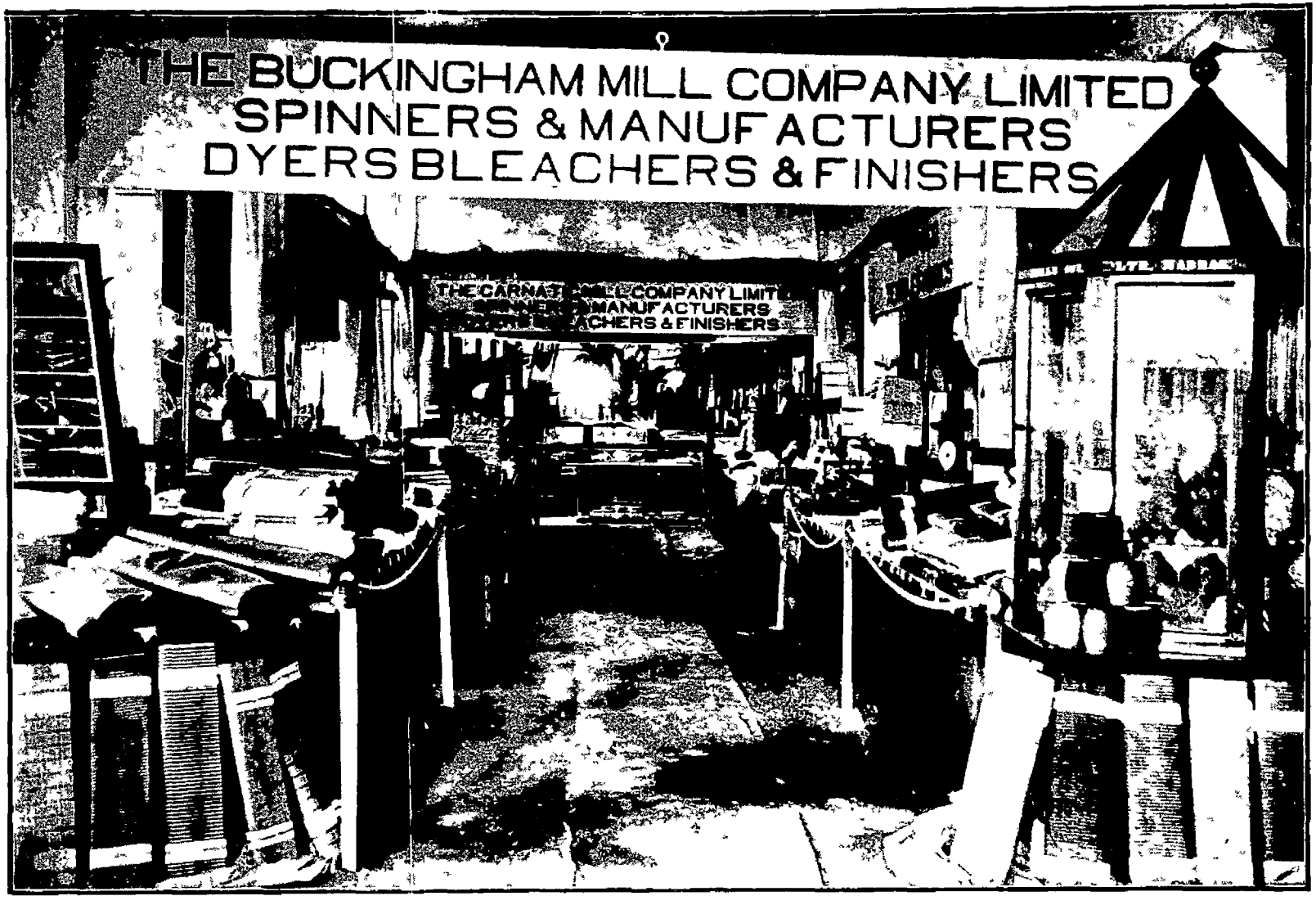
With some little training and careful attention to method, the industry might well be revived, and become a steady source of revenue to many small land-owners and capitalists. It requires much care, scrupulous cleanliness, and unremitting attention, but little actual labour.

Sericulture might well be taken up seriously to supplement income from other agricultural work, and as light and remunerative work for retired officials, etc. Two crops of silk from the common mulberry worm (*Bombyx Mori*) can always be secured in Southern India, against the one crop annually obtained in Europe, Japan and China. It is said that it was found difficult in days gone by, to limit the Madras "crops" to two a year. For the worms gave five and six annually, which naturally impaired vitality, reduced the quality of the silk, and was probably one of the causes of the decadence of the industry in these parts.

Many kinds of "worm" could be raised in this Presidency, besides Bombyx Mori and its varieties—Japanese, Italian, Mysore, etc.—there are also the *eri, tusser, cricula, atlas, moga, saturnia, phalaena,* moon moths, etc., most of these are omnivorous, and thrive on the foliage of many jungle trees.

Those interested in the re-introduction of silk culture, would do well to procure the interesting monographs on silk written by Mr. Nitya G. Mookerji, the well-known Director of Sericulture in Bengal, and a useful little book just published in Colombo by Mr. Percy N. Braine on "The Cultivation of SilkWorms."

There are many varieties of wool to be found in India. From the fine silky long stapled fibre of the extreme North and the Himalayan regions, to the coarse wiry hairlike wool which alone is available in South India. The Southern India wool is only fitted for well ropes, the weaving of coarse blankets, and hard and rough serge like cloths. The wool raised in the Southern Presidency does not take colour well, and, no matter for what purpose used, has always a dull, dead, and uninteresting face, quite different from the glossy rich appearance of goods woven from wool raised further North. Judging from some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excellent carpets exhibited by Mysore, it appears that a certain amount of a rather higher grade wool is clipped in that State.

Much might be done to improve the value of wool raised in South India by the introduction of a few good South African and Australian rams; for many sheep districts in Australasia and the Cape have very high summer temperatures, and the sheep are often put to great straits by prolonged droughts and consequent want of water and proper food. Yet, there is little finer wool in the markets of the world than that shipped from Australia. It is not so very long ago, that some high class Australian Merino wool realised four shillings and six pence per pound in the London wool exchange.

The clipping of wool from the sheep commences when the animal is six months old, and goes on for four years, the wool being clipped twice annually. The first process through which the raw wool has to pass is washing, it is then cleaned, this is done by means of a bow, and corresponds to ginning in the cotton industry. The fibre is then spun into thread by a handwheel. The wool is generally dyed locally for carpets, rugs, blanket weaving and other purposes, and the following is a short list of the materials from which the various colours are obtained from vegetable and mineral dyes in this Presidency :—

Red and orange :—Varthangi, Turmeric, and Dobie's Earth.

Yellow :—Murukkampoo (Butea Fondosa), Turmeric, Alum.

Green :—Indigo-dyed yarn is steeped in Murukkampoo, Turmeric, Alum.

Black :—Gall-nuts and Ferric sulphate, or Indigo and gallnuts.

Red :—Lac, Tamarind and Alum.

Brown :—With discoloured wool, yellow will give a brown shade, but if such wool cannot be obtained, then white wool is often discoloured with ferric sulphate, certain dark woods, and alum.

Light green.—Indigo, Turmeric, Alum, Sulphate of copper and lime water.

The Textile fabrics exhibited may be divided into the following classes :—

(*a*) Mill productions.

(*b*) Hand-loom productions.

(*c*) Jail productions.

(*d*) Brocades and Kinkhabs.

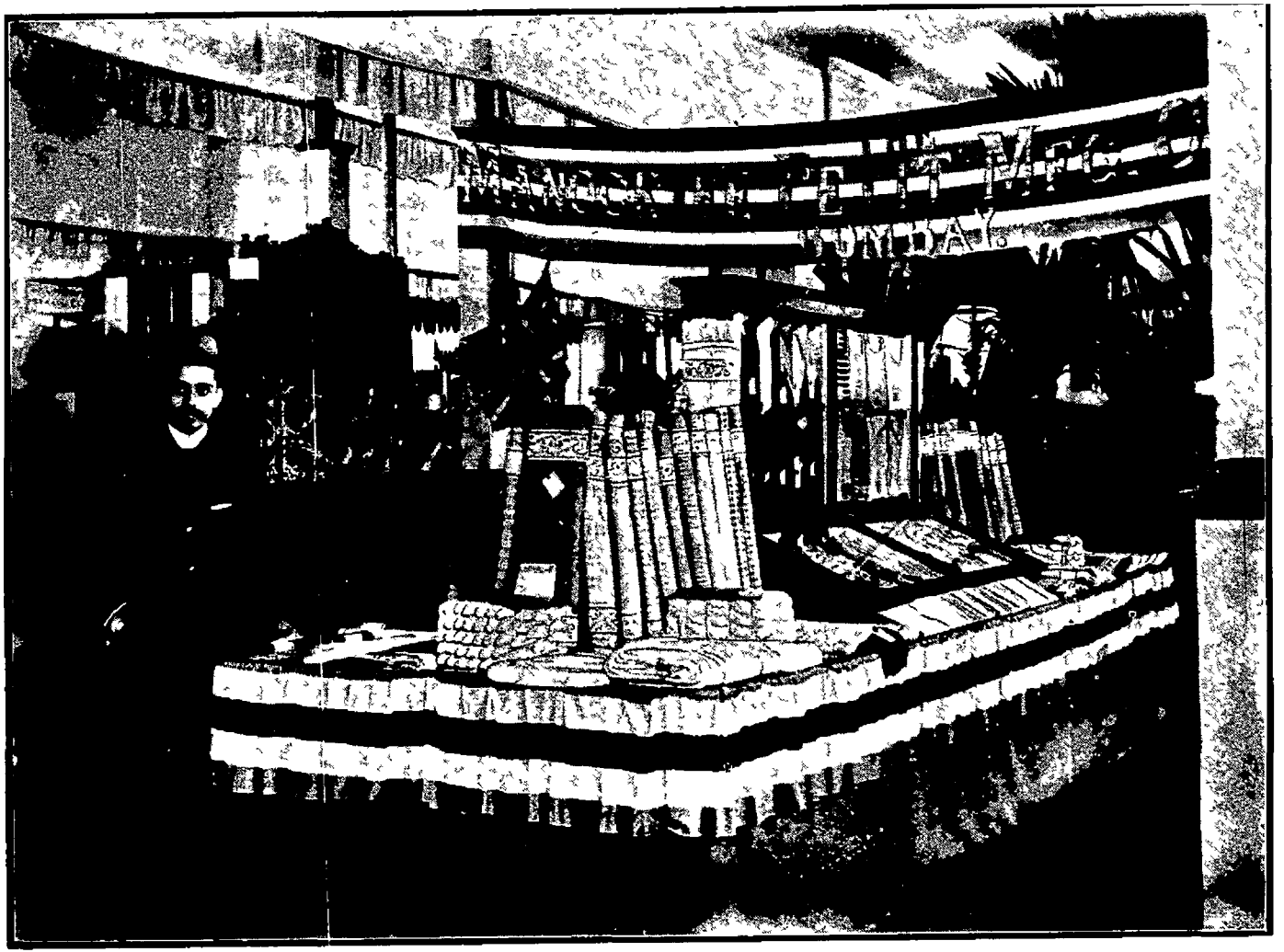
Messrs. Binny & Co., Agents to the Carnatic, Buckingham and Bangalore silk, woollen and cotton mill companies, exhibited a most interesting, representative, and varied collection of their several cloths made from cotton, mercerised cotton, and grandrille yarns, in checks,

bleached, napkins, sheets, dhoties, sadis, etc. The Carnatic and Buckingham Mills spin yarn entirely from Indian cotton. The yarn is also dyed and woven in the Mills. A speciality of theirs is the dyeing of an excellent and entirely *fast* khaki drill. Their zephyrs are largely shipped to the far east, and to East Africa. Their satin twills, grey-shirtings and country hollands are very fine grades of goods. The Bangalore Mills sent some nice specimens of hosiery and woollen goods.

The Manockjee Petit Manufacturing Co., Ld., Bombay, had a stall on which they displayed a well-selected and arranged collection of the various goods they make, in from fine to the lowest counts in cotton. Their exhibit was quite worthy of this great concern, and went a long way toward illustrating the possibilities of the whole weaving industry in India, covering as it did all manner of cloths, yarns, threads, and shaped hosiery goods in great variety, almost all being made from Indian cottons, all yarns used are spun in the mills. The elaborate display of grey cloth samples, fancy checks, drills, sateens and susi pieces, towels, table cloths, tapestry, bed quilts, khaki puggries, leno curtains of various descriptions, and different counts of grey yarn in bundles, are all fine, sound class goods. The hosiery and thread goods too are in great variety and comprise superfine caps in white and assorted colours, seamless socks, half hose, and stockings, white and fancy striped pants and guernseys, white and merino finished cellular shirts, etc.

Messrs. S. S. Bagchi & Co. of Murshidabad, appear to be an enterprising and leading firm for various kinds of silk wares. In addition to pure silk stuffs, they deal largely in *tussar*, *eri*, *muga*, and other wild silks in cloths suitable for European and Indian wear. They claim to have their own plantation of mulberries for rearing the worms at Murshidabad, and we learn that they have separate departments for spinning, dyeing, and weaving ornamental silk cloths on hand-looms. According to their own statement, they do not use alizarines or anilines at all, but only vegetable dyes, and we are assured all their colours are fast. Berhampore *endi* silk, *i.e.*, silk made in imitation of Assam silk, is one of their specialities, and is exported largely to Europe, America and other countries. They send also Kora silks in large quantities to France. Most of these are re-exported as French goods after dyeing and finishing. The firm manufactures spotted silk sadis, shawls, and gown pieces for ladies' wear. Their fabrics earned the rarely given "grand prize" at the Paris Exhibition of 1900, and they secured a gold medal from the judges in this Exhibition.

The well-known Basel Mission hand loom weaving establishments of Calicut, Mangalore and Cannanore, established in 1851, display some


SUNDAY

of their fine specimens of table covers, bed and toilet linen, tea and tray cloths, checks, suitings, turkey towellings, embroidery and drawn thread work, excellent imitation tweeds, ginghams, etc., in neat and fancy patterns. All the goods manufactured are sent to Bombay, Calcutta and Madras and are not generally exported out of India, the demand usually exceeding the supply. They use the best Manchester twist obtainable, and on account of superior quality of weave, material, dye and finish, all their goods have obtained a high reputation. They have a dye house worked on scientific lines, and use indigo and alizarine colours in dyeing their really fast-coloured twists. The plain and mercerised damasks, which are a speciality of the Mission, are well up to date in finish and design, and, except for a tendency to the use of thin lines and sometimes insignificant and too small details in ornament, the patterns are very good. They were awarded a gold medal.

The Punjab Trading Company are rather agents than manufacturers, and are dealers in shawls which they obtain from private weavers. They claim to have a small manufactory of their own at Amritsar, where they make shawls after the Kashmir pattern, but these are imitations of the higher classed goods, and are usually in startling colours and effects. Some of the woollen stuffs exhibited were good, cheap and strong. Among the exhibits to be specially noted was the Company's show of Egerton Woollen Mills cloths, consisting of travelling rugs, blankets, cloths, and flannels, almost equal in quality to the best English-made goods, and woven from fine Himalayan or imported wool.

That excellent institution the Kalabhavan, Baroda, exhibits yarns, plain and coloured turbans, napkins, towels, printed goods, carpets, handkerchiefs, saris, and bed-sheets. This School of Technology has been doing very good work in its dyeing department, Professor Gajjar is chiefly responsible for the present condition of things. He studied the art of dyeing thoroughly in Germany, and every certificated student passing through his hands is able to find remunerative employment in the mills of the Bombay Presidency. The Kalabhavan has also started three branch institutions in the weaving centres of the State—Katri, Vasu, and Vernagam. The students of the dyeing class, after completing their course at the Kala Bhavan return to their native places to develop and teach the art of scientific dyeing with alizarine and chrome colours. The Educational Department, Bombay, recognised this institution as a technical one in 1900. His Highness the Gaekwar is to be congratulated on having established so useful an institution, and one working on such sound lines for the benefit of his subjects.

The Chairman of the Conjeevaram Municipality contributed a large, varied and most interesting collection of the cloths produced in that large weaving centre, and representing the brocaded, decorated and plain weaves produced there.

Perhaps the most noteworthy parts of the collection were the many excellent specimens of silk cloths for Hindu ladies, both Brahmins and non-Brahmins. The patterns of these, with but few exceptions, were in Hindu styles, and in generally excellent taste. White and coloured silks, plain and figured, and very beautiful gold and silver bordered, brocaded, coloured, and enamel styled cloths in silk and fine counts of cotton were in great variety. The gold and silver threads are usually introduced as warp into the borders or as spots in the body of the cloth. Gold fringe ends are provided,either by being sown on, or worked into the warp, or run in as weft.

High caste Indian ladies in South India, do not consider their wardrobes in order, unless they are in possession of some specimens of this beautiful Conjeevaram wear. At any respectable Hindu wedding in Southern India the trousseaux of bride and bridegroom are not complete without some of the best products of the Conjeevaram looms. Latterly, the silk weavers have taken to producing sashes and belts in various good colours and patterns, silk handkerchiefs and dress pieces, plain, flowered, and fancy weaves for which there is a ready market.

It is noteworthy that Conjeevaram is one of the few large weaving centres where persons not belonging to the silk weaving guilds and castes, take up this trade and live by it. There is a good deal of weaving of heavier cotton goods in Conjeevaram, bath and other towels in strong good quality are largely made and exported, and these appear fully able to compete with similar mill made goods.

The weaving industry in Conjeevaram is a very old one, and is believed to have been originally introduced there by the ancient Chola Kings whose capital city it was.

It is most creditable to note that the members of the Municipal Committee were equal to the getting together of such a large and thoroughly representative collection of the manufactures of the city and its environs.

Very excellent cloths, similar to the Conjeevaram manufactures, are also made in and about Kumbakonam and Madura. In these three centres, the weaving of high class men's cloths is also a prominent feature, the goods produced being specially durable and nice for wear.

Salem is also an important weaving centre, but for a different class of goods to those described above. The principal cloths woven there are :—Men's cloths, cloths with various borders, children's

cloths with silk borders (for which it has a special reputation), cotton daris, sheets, etc. The cloths woven at Salem are of a class adapted for daily use, although the most costly of them are frequently given as marriage presents.

It is not so very long ago that the Salem cloths were in great demand over the whole of Southern India, and the demand for its really durable weaves was frequently in excess of the supply available. The industry unfortunately, seems now to be on the decline. This is apparently due to want of local encouragement, and to the competition of cheap priced, but slackly woven, common, and gaudy looking Manchester, German and Indian power loom goods.

The Mysore collection of fine count cottons, silks, and gold and silver laced cloths was a very good one. Govinda Sahuji and Usmankhan Sahib of Bangalore contributed the best of these exhibits. Some of their dyed cloths were in excellent colouring, a few others, however, were in rather harsh, hard tones. Some of the cotton punches with silk borders were in good taste, especially those in *Kanchi-Kornad*, and *Kanchi-Kuttalam* styles. These, with some other good cloths, were sent by the Industrial School, Melkote.

The Mysore handkerchiefs were all good, as were the silk kammerbunds and dyed saris. The Mysore cumblies, with and without silk borders were a distinctly good class, and woven from soft and fairly long staple wool.

Messrs. Katyaini & Co. and Girdhardass Haridass of Benares, Daday Khan, Paramananda Doss and Chotadas, Chaturbhuja Doss, Kusaldas & Sons, and F. P. Bhumgara, Madras, Usman Khan Sahib of Bangalore, The Industrial School, Melkot, Govindas Sahoji of Bangalore, Narasimayan Setty of Holey-Narasipore, Banappa Sankappa of Bangalore, Messrs. Takurdoss & Sons, Messrs. Kristnaram & Co., Madura, the Exhibition Committee of Trichinopoly, and others exhibited some silk and silk and brocade decorated cloths, many of which were very fine. Some of the cloths made for women were very beautiful, of these are the Tashi or bordered sadis, Pitambars or bi-colored waist cloths in golden yellows and reds, and waist cloths. Jungis of exquisite fineness were shewn, these too are in different colours of silk thread, presenting one tint for the face and another for the reverse side. The borders were decorated with beautiful patterns in all gold, enamel style, and silk. Suti-sadis or cloths for women's wear made of cotton are also manufactured at these centres in excellent patterns ; kincobs, silk cloths with lace flowers, bufti-cloths, or silk cloths with silk flowers, mundils (turbans), etc. Glazed cloths with artistic borders, called pot cloths,curtains,cap borders, table cloths, purses and silk comforters are also exhibited.

The gold and silver brocades in Persian and Benares style are worthy of special mention. Many of the false kincobs are very effective, although their cost is only a fraction of that of the real thing, and a future lies before these for curtains, table centres, decorations, drapery, and hangings, if the weavers will only go in for bringing prices within measurable distance of the actual value of their fabrics; for it is no secret that cent. per cent. is quite an ordinary rate of profit for such goods. It is unfortunate that a number of the exhibitors, or of the weavers who supply them, have little or no sense of color values. While the coloring of much that was exhibited deserves nothing but unstinted praise, there was on the other hand a good deal apparently dyed with the crudest and harshest of common aniline colors. Many of the patterns in kinkhabs were excellent. We noticed among others, such good designs as Birtedar, Beldar, Shikargar, Jangla, Chand-tara, Dup-chand, Bulbul-chasm, Murgala, Mazchar, etc. But there were also unfortunately a number of meretricious looking patterns, apparently evolved from the cheapest and crudest of wall papers, or from a third rate linoleum catalogue.

The Indian Stores, Limited, Calcutta, are manufacturers and agents for several firms. They exhibited fine Dacca muslins, silk cloths for ladies and gentlemen with flower work in lace and black thread. Some of these are gauzy and delicate. They also displayed a bed sheet called the '*bala-posh*' made of fine cotton yarn on one side and of silk on the other, also table-cloths, embroidered and plain, very good tassah silk pieces, chelio (turbans) and silk sheetings. They manufacture dhoties with borders similar to those produced by the South Indian weavers, but in rather coarser counts. They exhibited some excellent goods from the Cawnpore Woollen Mills Co., whose agency they hold. Some fair carpets of Persian pattern were also exhibited by them.

The State of Pudukkotah is noted for extracting a scarlet dye from vegetable roots such as *Imbural* (*oldenlandia umbellata*) or Indian madder, *pâvandi* (*sapindus emarginatus*) *manjittee* (*rubia munjista*) and *nuna* (*morinda citrifolia*). The other ingredients added to these roots to form the dye, and their proportions, are a secret, which the weavers will not divulge. A few of the cloths dyed with these were exhibited, the colours are excellent and very fast. This State also exhibited some beautiful silk cloths with ornamental lace-borders and kincob imitations in the body of the cloth. This is known as *kappayi* and finds a ready sale among the Burmans. Some very cheap cotton stuffs for ordinary wear are also displayed, and on account of their great cheapness and durability, they deserve mention.

View in the Textile Court

EMBROIDERIES.—There was aquantity of silk embroidery shown, much unfortunately in the coarse staring tawdry patterns made specially for the export trade markets, and which was sent here apparently, to illustrate of the cheaper Ludhiana and Amritsar style of embroideries. Silk embroidery in colours has been sadly neglected in India of late years, and German and Austrian houses fill much of the market with cheap machine-worked goods. To resuscitate the trade, greater care should be bestowed in the selection of the ground material, and in the colour effects, and, as the people of India excel particularly in this art, it is well worth the effort to hold the market in this line. Some beautiful embroidery is still made in Madras, and Daday Khan Saheb showed an excellent assortment of fine embroideries in silk, gold, silver and cotton, designed to suit all tastes, and at prices to fit all pockets. F. P. Bhumgara of Madras, also sent an excellent collection, but some of the colour effects were perhaps a little startling. Mr. Giridass Haridass of Benares, displayed an eccentric looking purdah of silk and lace with figures of a lady, animals and buildings embroidered on it, this was very well worked, but in bright hard colouring. Pandit Paramanandha of Ludhiana, exhibited a fine curtain made of silk embroidered in colours and excellently worked in an old Hindu pattern, we cannot agree with his ideas of colour.

PALAMPORES or Palangposh, which means bed-cover, were once largely made in several centres of Southern India, as Kalahasti, Arcot, Cuddalore, Masulipatam, Arni, and Salem ; but now the industry is carried on to a very limited extent, owing to competition with cheap European-made chintzes. One hardly knows how to successfully keep alive the old-fashioned work with its nice detail and harmonious colouring, for the poorer classes will always demand cheap goods ; and often prefer gaudy, meretricious coloring, but something can be done in the direction of fostering high class goods, by bringing them to the notice of those able to pay for them ; and by exhibiting them in show rooms with somebody at the head of the business capable of selecting the best goods, and of instructing the printers in pattern and colouring.

The Palampores used in draping the brass-ware court in the Exhibition were fair samples of Kalahasti work. Representations of scenes from Hindu mythology and figures are printed from wooden blocks, and the finer detail is sketched in by pen and brush-work. For a single sheet, sometimes as many as 500 different blocks are used. One of the sheets exhibited represented a colossal bull bearing the God Siva and his wife on his back, and another represented the Dasavatara Scene of Vishnu's incarnation. The Hon'ble Mr. K. Vasu-

deva Aiyangar, exhibited a really good old fashioned specimen of a Palampore, bearing an illustration of the ten incarnations of Vishnu.

Palampores are peculiar, in so far that one class of them have preserved apparently their original character, bearing as they do, scenes from Indian mythology in the Dravidian style, and with written description in the vernaculars. Dr. Bidie has thus described the making of them.

"In some cases the figures are printed on the cloth with wooden blocks, but all the finer Palampores are prepared by stencilling and hand-painting. The stencil plates are made of stout pieces of paper. On these the outlines of the pattern are first traced in ink and then perforated with minute holes in the most accurate manner with a fine needle. The stencil is then complete, and when in use, is placed on the cloth and covered with charcoal in very fine powder, which is webbed so as to make it pass through the minute perforations and leave a tracing. The rest of the work is done entirely by hand, and thus considerable scope is given for the exhibition of individual taste in the selection and grouping of colours. The Palampore made in Kalahasti, Elambadu, Anantapur, Tirupapaliur and Jammalamadugu, almost invariably bear mythological scenes."

Those made in Masulipatam and Godaveri are frequently in the Persian style of decoration, and are altogether different in appearance from those described above.

Sir Geo: Birdwood writing of these goods, says:

"The chintzes of Masulipatam have enjoyed a world-wide celebrity ever since the days of Arrian, and probably of the Mahabharata. They are prized for the freshness and permanency of their dyes, the colours being brighter after washing than before. There is still a great demand for them in Burma, the Straits, and the Persian Gulf, but Manchester goods threaten to destroy also this immemorial industry of India. Nearly all the Masulipatam chintzes seen in England are copied from Persian designs of sprigs of flowers, and of the knop and flower, and tree of life patterns. Wherever the Muhammadan influence is carried in India, the decorative symbols of the Aryan race are introduced. But at Masulipatam the Persian designs have been introduced through the trade with Persia, and probably by Persian Colonists."

Dr. Forbes Watson says that "in point of art decoration, the best of the old Palampores are simply incomparable; and that they ought to be classed with the finest old Indian pottery and the grandest carpets." Bernier, who visited the Emperor Shahajahan in 1663, thus describes the Palampores used in the decoration of the royal courtyard: "It was red from without, and lined within with those *chittis*, or cloths painted by a pencil of Masulipatam, purposely wrought and contrived with such vivid colours and flowers, so naturally drawn, of a

View in the Textile Court.

hundred several fashions and shapes, that one would have said it was a hanging parterre."

Mr. Ganapavarapur Venkannah of Chicacole, Mr. Gataram Pappiah of Cheerala *via* Bapatla, Mr. Patnala Sanyasi of Coconada, the Secretary of the Exhibition Committee, Coconada, G. Subraya Chetty of Kalahasti, the Exhibition Committee of Masulipatam, M. Seshadri Chetty of Kollegal, the Curator, Government Museum, Nagpur, the Exhibition Committee of Trichinopoly and others, contributed a varied assortments of printed cotton goods, the waxed loonghees from Mr. Gataram Pappiah being specially good. The great paucity in pattern, and the very limited number of colours generally used, show how steadily the trade in block and wax printing is being killed in Southern India. The cause of this decadence is apparently twofold, competition with the cheap tawdry, staring, flimsy products of German and Manchester factories ; and the entire lack of enterprise in the few into whose hands the industry has fallen.

It is interesting to note here that in the year 1641, Manchester handprints, claiming to be close imitations of "Indian cottons" were made out of wool ; so it is evident that Madras chintzes had a hold on the English markets as early as the middle of the 17th century, although the quantity imported must have been very small. In 1719 and 1720, imports of these goods had apparently much increased, and the weaving industry in England agitated for their entire exclusion from the country. The petition sent to Parliament objected particularly "to the flowered cloths of colored cotton which the Hon'ble East India Company brings by its ships from Metchlipatam, Madraspatam, and Fort St. David, to the great injury and prejudice of ourselves and our workers and to the trade of this country." The petition further asked that the manufacture of imitations of India chintzes should be also prohibited. The result of this clamour was that the Government were forced in 1721 to enact a statute prohibiting entirely the importation and use of Indian prints, and the manufacture of imitations thereof. In 1736, an Act was passed permitting the importation of these goods under conditions, and cloths could be printed again, provided their woof was entirely of flax. The introduction of improved looms, changed all this by the middle of the 18th century, and by 1769 England had recognised that prohibitions against the importation of any goods were altogether in violation of the first principles of political economy.

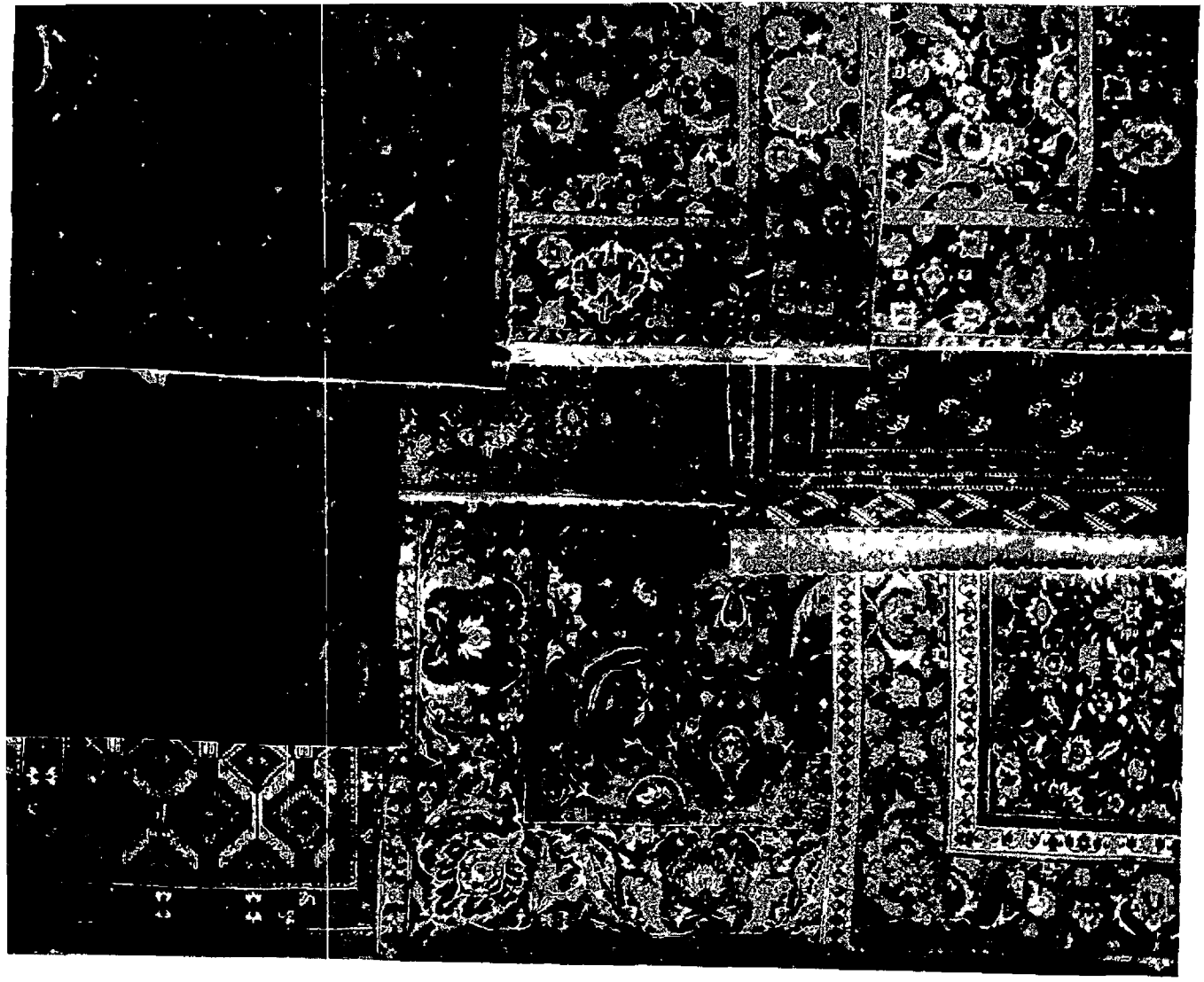
It is the free importation of raw material, and the ability to copy by machine process almost any design sent to the mills, that has enabled Manchester to compete so successfully with hand-printed

chintzes of all kinds. That there is a possibility of a revival in chintz printing and waxed cloth patterning in South India, is, we think, proved by what has happened in and about Furrakhabad, Jafarganj, and Jahangirabad in the United Provinces, where a few firms have succeeded in reviving the above industries, and in developing very large interests for themselves. Their work is almost entirely done for export, in designs sent from the United Kingdom, the Continent and the United States of America. These patterns are largely reproductions or modifications of old Persian, Turkish, Moorish, Spanish and Italian prints. Some years ago there was a great falling off in this trade. It was found that a number of the colours used were not only fugitive to water, but were not even fast to light. Enquiry showed that this was due to the use of cheap aniline pastes, which were found cheaper than the fine old vegetable dyes. Since then however, both makers and indentors have learnt that the better class of alizarines are more beautiful, and even more permanent, than a great percentage of the vegetable colours that are so near to the hearts of those who understand and appreciate old Indian decorative work.

It must be clearly understood that this class of Furrakhabad printing finds little or no market in India ; and that the success of the firms now engaged in the industry depends entirely on their ability to carry out the instructions of their indentors.

We are sure there is ample room for a revival of the Madras chintz work, provided it is under skilled direction, and is worked on right lines, and with sufficient capital.

CARPETS.—Most of the jails of this Presidency and of some other provinces, display good specimens of carpets and rugs. The Jaipore Jail sent a few good carpets, the rugs they exhibited being among the best. The Vellore Jail, which had a great reputation for carpet making, and did regular business with some of the largest London houses, lost much of its good name by the use some time ago of cheap aniline colours. The trade however is gradually being recovered, and there were some very good carpets sent by this jail, also some novelties in the shape of wiry, and bristly piled rugs made from sisal and aloe fibres. The Mysore State exhibited an excellent assortment of carpets made in the Mysore Jail. The colour scheme of a fine specimen was blue and gold on a white ground, in another, faded antique style colours were used with good effect. The Bikaner Jail contributed a small collection of particularly well woven carpets of the soft desert wool, these were excellent copies of good old patterns, and were in rich, soft, and harmonious colourings. The Madras School of Arts sent an excellent carpet from one of the best of the old Vienna designs.



Woollen Pile Carpets.

Copies of old patterns.

Mr. J. W. Coombes of the School of Arts, Madras, exhibited a handsome and interesting carpet, designed by himself in late XVII century style, with many of the characteristics of the old Feraghan —Saruk class of rug; and which was woven in the School of Arts under his own supervision. This exhibit deservedly secured the special gold medal for carpets.

The Central Jail, Bangalore, exhibited woollen carpets made of a good grade of wool obtained from Dhavanagari, sound carpets from North Indian designs, Namaz carpets for Mahomedans, rugs in mosaic patterns, cotton carpets of Egyptian pattern, Khaki durris with blue stripes, as largely used by the native army, and quilts, towels and coarse woollen blankets for estate coolies and domestic servants.

Carpet-weaving is one of the most important minor industries in India, and it is unfortunate that Government has not done something to resuscitate the trade, beyond what is being done in the jails. The Indian holds the field, and will continue to do so as long as labour is cheap, and provided he continues to pay reasonable attention to the quality of his manufacture. Government might inaugurate an inexpensive and practical treatment of the carpet industry, by sending instructors round to teach the village masters and workmen designing, pattern writing, colour effects, good dyeing and weaving. The difficulty in the carpet industry is to get the weavers to realise, that it is as easy and as cheap for them to make an artistic low grade rug, as an ugly one. Labour, cost of materials, and colours are the same, and, as it is solely expense that deters the workman from adopting anything new. The weaver will soon learn to turn out cheap carpets of artistic pattern, when he is shown that it pays him to do so.

Writing so recently as 1879 Sir George Birdwood in "The Industrial Arts of India" said "The carpets of *Masulipatam* were formerly amongst the finest produced in India," and, complaining bitterly of the deteriorating influence of English indentors upon the industry, he concludes his notice of these carpets by saying "these glorious carpets of Masulipatam have sunk to a mockery and travestie of their former selves."

The Malabar rugs were the only woollen pile carpets made from pure Hindu designs, and free altogether from European, as well as from Saracenic influence; Sir George Birdwood says of these.

"No other manufactures of carpets known could hold a pattern together with such a scheme of colouring, and scale of design. The simplicity and felicity shown in putting the right amount of colour, and exact force of pattern, suited to the position given them, are wonderful, and quite unapproachable in

any European carpets of any time or country. They satisfy the feeling for breadth and space in furnishing, as if made for the palaces of kings."

The carpet industry in the Malabar Coast is practically dead, and it is said that the only specimens of Malabar rugs left in the country are in very limited number with the Zamorin of Calicut, and one or two other old families on the coast.

Of the Ellore carpet industry Sir George Birdwood is again worth quoting, he says :—

"These, which are known in the London market by the name of *Coconada*, the place of their shipment on the Coromandel Coast to Madras, prove that carpets of uncontaminated native designs and integrity of quality are still made by the weavers of India, but of varieties not yet generally recognised by huckstering European dealers, and obtained from villages far away from English stations and railway lines. They are equal to anything ever produced in the Dakhan. The colours are now perhaps a little more brilliant than was observable in the memorable examples from the same district shewn in the Exhibition of 1851, now in the India Museum ; but this brilliance is really due rather to want of age, for the details have, in a high degree, all the varied play of color and charm of pattern of the older carpets, and time only is required to mellow them to perfection. Two of these *Coconada* or *Madras* rugs have been lent to the South Kensington Museum by Mr. Vincent Robinson ; one is of a very distinctive pattern, and perhaps the most beautiful known of this variety of Indian carpets. Their weavers are Muhamedan descendants of Persian settlers."

In 1851 Dr. Forbes Royle writing of Ellore carpets, after contrasting these with Indian rugs from other centres, said :—

"The rugs from Ellore, on the contrary, were universally admired for their general characteristics of oriental pattern and colouring : and these as well as the large carpets from Mirzapore, etc., which were all in the same style, seem well adapted for sale in Europe."

The Exhibits of Carpets sent from Ellore, were poor in conception, weave and colour ; and a visit paid to that station by the writer a few months ago satisfied him that no single word of Sir George Birdwood's and Dr. Royle's lavish praise can now be applied to the industry. The patterns in use were poor, and usually modification of cheap, Wilton. Kidderminister and German power loom designs. The old patterns are still with the weavers, but unfortunately there is no trade demand for this fine class of goods, the old dyes are being forgotten, and have given place to cheap anilines unskilfully applied.

DARIS AND SATRINJEES : are woven from cotton yarn and on cotton warp. The commonest are usually made in plain blues, or in stripes of varying tones of reds, blues, yellows, browns and white, and are not often bordered. Better qualities are frequently produced bear-

ing geometric and floral pattern. One of those exhibited by the Bikaneer Jail, is apparently a copy, or reduced modification, of a Satrinjee, the property of the great mosque in Bijapore and which is said to have been presented by the Emperor Aurangazib about 1626. It bears on a deep red ground a saracenic arch ; hanging from the centre of which is the lamp symbol of the Moslem faith, and it is bordered with a geometrical pattern.

The Jails in the Madras Presidency contributed some firm, well-woven Daris. A few of these were in good patterning and colour, but many were very light, and bore narrow stripes of mixed colours which made them look distinctly garish and uninteresting. The excellent Cawnpore Mill and Agra Daris in broad stripes of bold, rich colouring, were not exhibited,this was a misfortune, as they would have afforded an excellent object-lesson to many of the Dari weavers, who visited the Exhibition. In this Presidency, Iyyampet, Salem, and especially Adoni, were for a long time famous for the manufacture of these cotton carpets. The industry is decaying, and there seems little chance of its resuscitation, so long as the weavers continue turning out goods such as were sent to the Exhibition. Many of those shown were really not Daris at all, but portierés, curtains or hangings in tapestry weave. They had little body, being loosely woven on flimsy weak warps, and had far too much jumble of narrow lined and vividly coloured pattern, to possess any artistic merit at all. Many other dari exhibits were not woven on the plain dari loom, but on tapestry looms, and the intricate patterning of those in other than striped decoration, although really part of the weave, appeared almost as if it had been separately made, and needle-woven into its place in the fabric.

Small Daris are very largely used by Mahomedans as praying carpets (*Jainamaz*) and one often finds much more art than might have been expected in the patterning and colour of these. There appears little doubt that cotton carpets were very largely used in India from the earliest times, and that very little woollen pile carpet-making was done in the country until it was introduced after the Moslem invasion.

The Travancore State, the Dewan of Cochin, Superintendents of the Central Jails, Vellore and Salem, The Government Botanical Gardens, Ootacamund, the Tahsildars of Wandewash and Chidambaram, sent coir mats, hemp mats, grass mats, kora mats, Tinnevelly mats, coir rugs and fibres, all very useful articles,

The Agricultural Farm, Saidapet, and the Mysore State, exhibited many varieties of fibre. There are large possibilities for many of these fibres in skilled hands.

The School of Arts, Madras, exhibited some very fine lace cloths for male and female wear, in good texture and fine count. They were distinctly creditable to the institution, as weaving was only recently introduced there. The School of Arts exhibits were "not for competition," or would doubtless have been noticed by the Judges.

We must not omit to mention exhibits sent from the Central Museum, Nagpur, in the shape of some specimens of gold lace and enamelled style saries. These were mostly in the fine old Khandeish weave from Burhampore. Patterns, coloring, and texture were alike good, and it is unfortunate that nothing seems possible in the direction of seriously reviving this beautiful old industry, which the competition of tawdry European-made goods seems to have almost killed.

Mr. G. Krishnamachari of Hyderabad, sent an exceedingly interesting piece of old silk batan cloth. It is heavily decorated with gold and soft rich colours on a dull Arab red ground, and bears a border in gauzy weave decorated much after the best old Persian manner. Its charm is in the very artistic and uncommon scheme of colouring, and in the beautiful regularity and evenness of its texture.

The silk screen sent by the Technical Institute, Madura, is an excellent piece of work ; but it is distinctly unfortunate that the colouring was so hard, badly blended, and uninteresting.

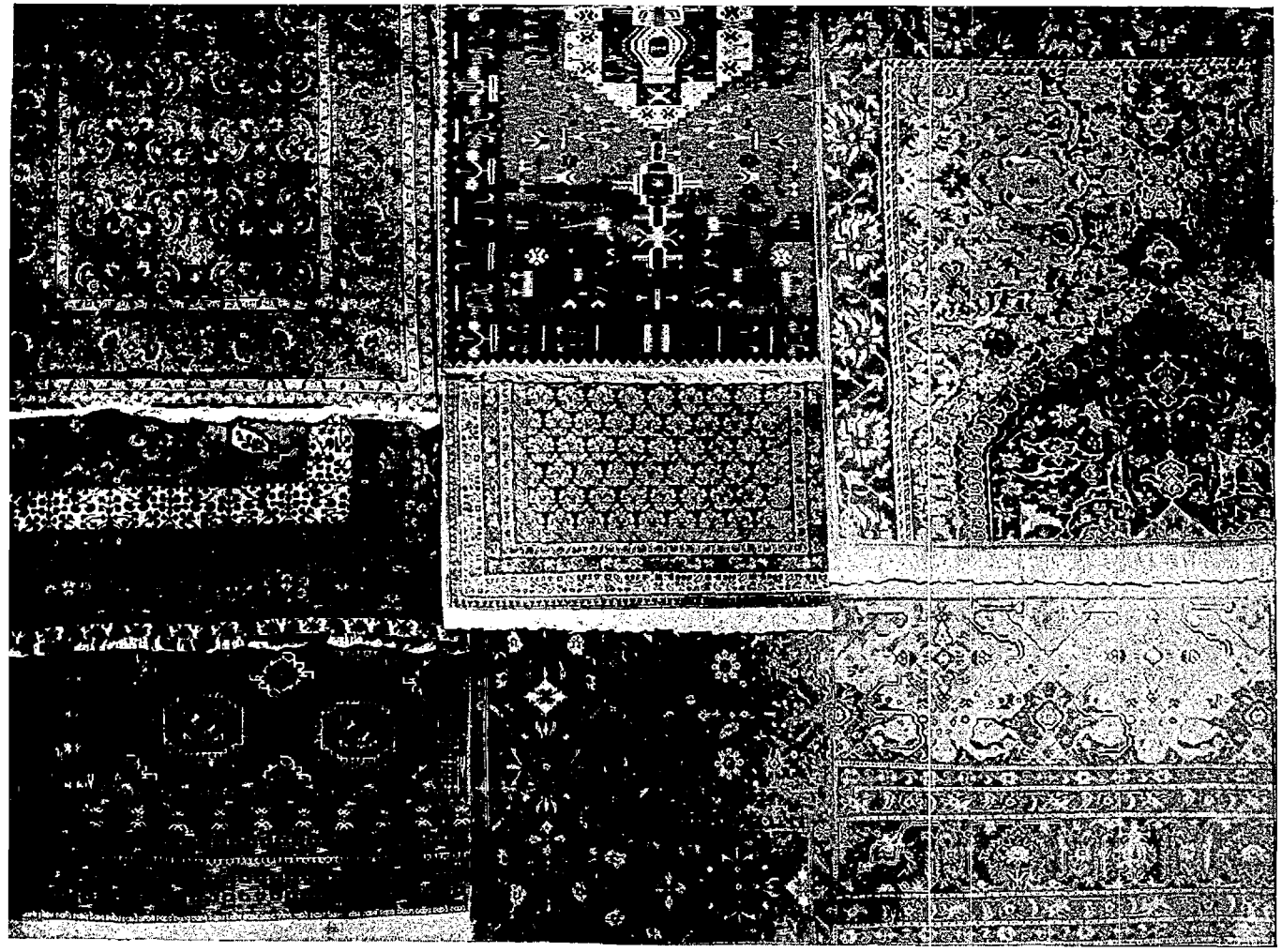
Pudukkotah sent some excellent specimens of needle-work.

Messrs. Kursandass Gurdass of Baroda, exhibited a robe bearing very beautiful embroidery, the peacock design on it being most artistic. This is a typical old Hindu pattern.

The Nagercoil Institute sent pieces of cloth woven from plantain fibre and cotton, and from the fibre alone. These are well woven and interesting, with a nice glossy surface, but we fear no great progress can be made with this cloth until some means are devised of removing the rough harshness of the fibre. Experiments will doubtless in time attain this. [Since writing the above it is reported that the Travancore School of Arts has succeeded in removing altogether the harshness of the plantain fibre, and that handkerchiefs, towels, turban cloths, etc., of great softness, and which stand washing well, are now being made and sold in Trevandrum and Nagercoil. This, if altogether correct, means much for the industry.]

The Mysore State is far ahead of all others in the variety of its collection of fibres, and goods made from fibres grown in the State.

The collection of cotton, linen, and silk lace, and European embroideries and needle-work, deserved better display than the Committee were able to give them with the limited space at their disposal.



Woollen Pile Carpets.

Copies of old patterns.

Amongst the best of these exhibits, we instance an antependium made in St. Anne's Convent, Mangalore. This was a very beautiful piece of gold and silk embroidery, edged with lace, and in rich and artistic coloring. The Presentation Convent, Madras, the S.P.G. Mission, Trichinopoly, Idiyangudi and Nazareth, Mrs. Beer, Narasapoor, Mrs. F. E. Thomas, Mengananapuram, the Anjuman-i-Mufid-i-Ahla-i-Islam, Madras, Mr. Muscrami of Quilon, Rev. A. Andrew of Chingleput, Mr. Limbrick of Ramnad, Mrs. Stevenson, Gooty, Miss Fletcher Palwal near Delhi, the Friend-in-Need Society, Madras, the Basel Mission, and Mrs. H. Landale of Berar, were conspicuous for good things amongst the many exhibitors of this class of goods.

The variety of lace, crochet and other similar goods exhibited, was very considerable. Among others, we found excellent specimens of point, net, Honiton point, Carrickmacross, Limerick, Donegal, torchon, cushion or pillow, crochet, drawn thread-work, applique, etc. Most of that exhibited was made in various Mission institutions, and undoubtedly originated with European ladies, who had learnt the work at home. To this however, there is one exception. In Quilon, Nagercoil, Allepey, Trivandrum, etc., cushion lace making is quite an industry of the people, and hundreds of women and children earn a living by it. A number of the best patterns in use there are very old fashioned, and there appears little doubt that lace-making originated with the Portuguese or the Dutch, or possibly earlier still.

General Cullen, who was Resident in Travancore in the early fifties, writing of the lace industry there, said :

" Experts admit that the Travancore lace, although knit by the natives of the country, is quite equal to the best French make. No one now appears to know how the industry originated here. Many declare that it was in existence in the country before there was any permanent European influence on this part of the coast. Most of the patterns in use resemble Bedfordshire, Honiton, and Galway laces in their manner of working and patterns."

The only other part of India where lace-making appears to be indigenous is Beluchistan and Western Afganistan, where a form of torchon, often in coloured silks, is made for the bordering of embroidered shawls, coats, etc.

Calcutta, Dacca, Peshawar, and especially Lucknow, are the principal centres for chickan, drawn thread and other washing embroideries. The quality of the Madras silk embroideries on cotton and washing silks, and cotton and flax on cotton and linen, do not compare favourably with those made in Northern India. Kidarnath and Ramnath of Lucknow had an interesting exhibit of this class of work, which compared most favourably with anything shown from

Southern India, and yet the Lucknow exhibit was only one of average quality, and contained nothing of very special merit.

The Central Museum, Nagpur, sent some good embroidery in leather. This however is not to be compared with embroidery done in parts of Kathiawar, Bikaneer, Hyderabad-Sindh, Beluchistan, Malerkotla, and Chanda in the Central Provinces. With the cheap labour and well-tanned skins available in Madras, it should be possible to develop a trade in embroidered, embossed and decorated leather goods for the European markets.

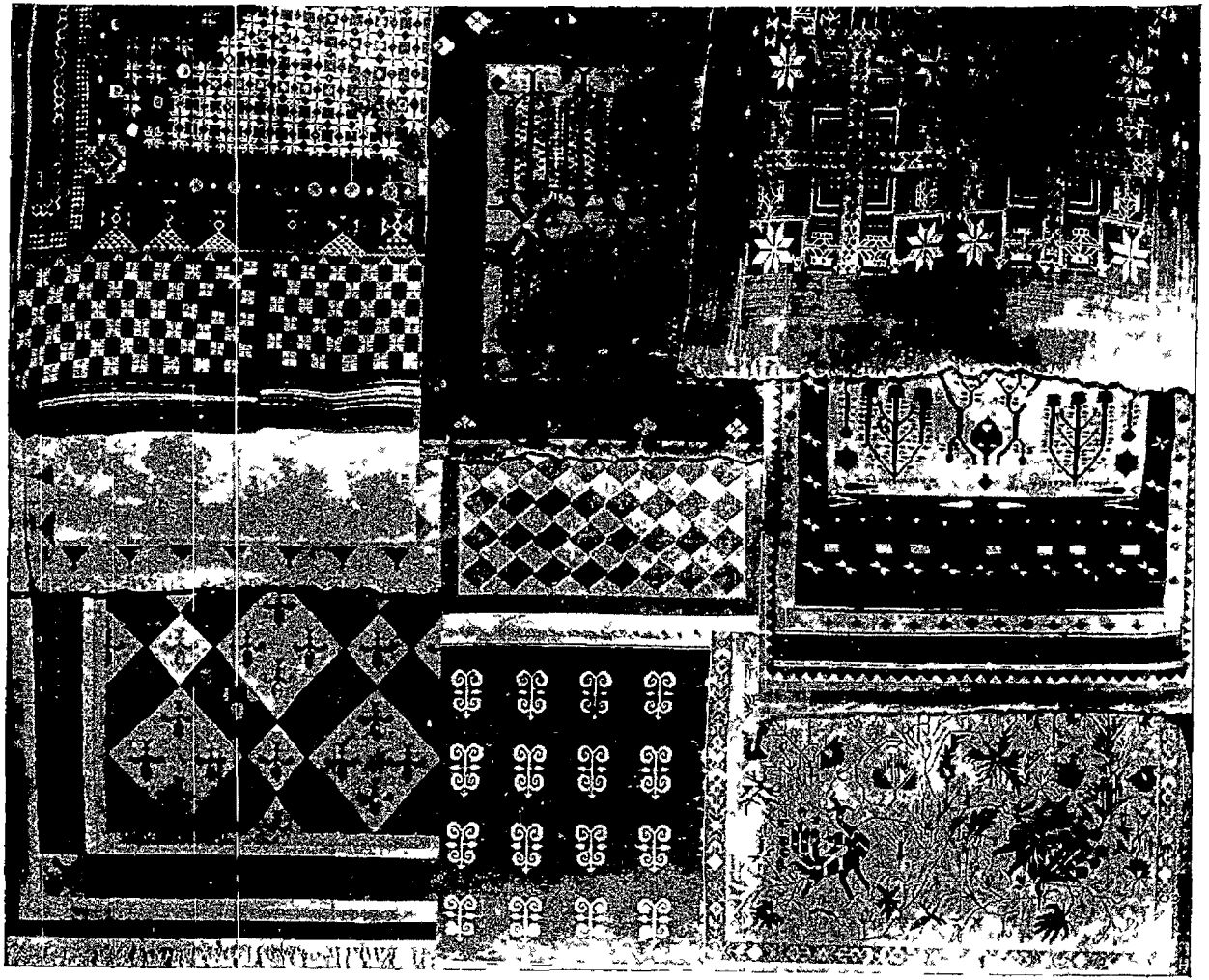
The show of phulkaries was a very poor one. The solitary exception being the fine red desert embroidered woollen cloths sent by the Bikaneer State. The few others shown deserve no mention here.

The Chhoi Silk Mills, and the Sassoon and Alliance Silk Mills, both of Bombay, sent interesting collections of white and coloured silks, plain and figured, all of which should compete well with the less expensive grades of French, German, and Japanese silk. None of the fabrics exhibited appeared to have more than the average amount of filling.

The mats and mattings exhibited formed a good and representative collection. Among others, we would specially name goods sent by Messrs. Cameron & Co. of Quilon, Mr. Samaludin Lubbay, Mr. Kota Jammiah, Mr. Kola Thavudu of Parlakimidi, and the Central Jail, Vellore.

Some of the grass mats from Tinnevelly, South Canara, Malabar, Travancore and Cochin, were specially fine in fibre and weave, the patterns were artistic, although not specially original.

These mats are made from the culms of *Cyperus Pongarie*, the best and finest of them are produced in Tinnevelly, and bear little decoration beyond simple stripes of red and black. The best of these are said to be so thin that a full sized one can be rolled and put inside a hollow walking stick of average size ; the finest specimens exhibited were certainly not equal to this test. Those from Palghat, Cochin, and Malabar had a good deal more colour, and were decorated in black and red, with various geometrical designs. All these mats are made on a thread or twine foundation ; the black dye is given in the usual manner, with iron, *Babul* pods, and powdered gallnut ; the yellow is usually given with turmeric, modified with either iron or *Sappan* wood according to the tone required, the red colour comes from *Kusan* leaves. (*Nemecylon edule*) and (*Casalpina Sappan*) in varying proportion. The writer was sorry to observe a few specimens of mat goods from the Northern districts, and one or two from Malabar, which had been altogether spoiled by the use of aniline colours.



Bikaneer Woollen Phulkaris and Cotton Daris.

Japan and China do a very large business with America and Europe in mats of similar weave, and usually in very artistic yet simple coloured patterns. Prices quoted for the best of these goods by the retailers seem to indicate that there are ample margins for profits between the producer and the retail vendor.

With weaving of most kinds so much in evidence as it is in the Southern Presidency, it is strange that no attempt has been made to imitate the cool *Sitalpati* sleeping mats, which are made from the skin of a reed (*Maranta Dichotoma*), which grows in marshy places in Eastern Bengal, and probably also in Southern India. There is also the *Masland* mat in Bengal, which should be easily made in Tinnevelly and Palghat, the best of these are said to be so smooth that a snake cannot crawl over one. Calcutta does a large export business in these goods in several directions.

Messrs. Cameron and Co's. small exhibit of coir mattings, plain and coloured, was a good one, in excellent weave, the colours used were in good taste and effective. The Vellore Jail mats were a creditable exhibit, and in close, clean weaving.

Wandewash in North Arcot, Shyalli and Tanjore, Porto Novo, and other places sent mats in bamboo, rattan, palmyra, cocoanut, and date leaf, screw pine, and various reeds, fibres and culms ; of these the best were from Wandewash and Shyalli.

This brief report on the textile group of exhibits in the Madras Industrial Exhibition, has attempted also to record in some measure the condition of the industries, and the possible means of vitalising and developing them ; without losing sight of the artistic and commercial aspects of the question, and it is to be hoped that the suggestions offered will be taken up earnestly in the near future by some public-spirited Indians.

Group VII.—Vegetable and Animal Products:—Various references in the Vedas and Puranas, the Bible, the works of Discorides, Herodotus, Pliny and other ancient writers, show that the spices, drugs and dye-stuffs of India have been known, appreciated, and in demand in Western Asia and Europe from the remotest ages. Thus, mention is made in the Bible of cinnamon, spikenard, lign-aloes, calamus and saffron ; and Discorides and other early writers refer to pepper, dragons-blood and several dye-stuffs, cloves and ginger, amongst other Indian products.

As time has passed the ideas and tastes of the Western World have often changed in regard to some of these articles ; but a greater change has been in the routes by which they have been carried to the consumers. From very remote times Indian produce was carried westward by caravans, and afterwards in ships by the Red Sea or the Persian Gulf. Then came the period when the commerce of the East travelled round the Cape of Storms ; and now we have steamers following again the old trade route by the Red Sea, and finding, in the Suez Canal, the silvern thread that links the old *Erythræum* to the *Mare internum*.

Of cereals, pulses, dye-stuffs, economic and medicinal drugs, gums resins, barks, woods, roots, grasses, nuts, wax, honey, curry stuffs, etc., the various collections exhibited were interesting and instructive, and must have proved valuable object-lessons to many who visited the Exhibition. The Mysore Government sent in specially representative collections under most of the above heads, giving in many cases, the local as well as the botanical name of each item exhibited. Many of these exhibits too bore on the labels, dates for sowing, and other information of value to the agriculturist. This State also sent samples of new and improved varieties of sweet potato, which are being so successfully grown there. We suppose the disappearance of the old stringy, small rooted, country sweet potato from Mysore, is only a matter of time. The size, flavour, health and productiveness of the imported variety of tuber being so much in favour of the grower.

Mr. Kamashi Rau of Madura, the Pudukkotah State, the College of Agriculture, Saidapet, Mr. Chidambernatha Mudaliar of Shiyali, the Government Experimental Farm, Kala, the Maharajah of Bobbili, the Tahsildars of Adoni and Chilambaram, the Raja of Ettyapuram, the Exhibition Committee, Coconada, Mahomed Esack Amadeen of Shahpur, Punjab, and several others, sent more or less valuable collections of seeds, grains, pulses, roots, herbs, etc., many of which were scientifically named and listed. The onions from Mysore and Bellary were apparently grown from imported seed, and were good specimens. It is believed in India that the eating of good onions improves the

colour of the skin. The Lingayets of Mysore and Bellary are often fairer coloured than other Hindus, and this has always been attributed by Hindus to their eating onions in very large quantities ! It is certain that the best meal that can be given to a Lingayet consists only of a few cakes made of cholam or ragi flour, with a great quantity of raw onion ground up with spices into a chutney.

It is strange that with the exception of Mysore, the Saidapet College, and one or two other exhibitors, very few varieties of vegetable seeds were sent in, and of European cold weather varieties hardly any. The Mysore State was alone in its exhibit of fresh vegetables and fruit, all of which were excellently grown. The Pudukkotah State, the Exhibition Committees of Cuddapah and Coconada, the Mysore Durbar and Nandlal Nijjar of Chamba in the Punjab, sent in some beautifully clean specimens of honey. It is unfortunate that the value of honey as a food appears to be little known or understood in most parts of the Southern Presidency. In Northern India, Sind, Bengal, the Central Provinces, Central India and Assam, and in all the Himalayan and Sub-montanic tracts, the food value of honey is fully known and recognised, and there are large numbers of the peasantry in many provinces who prefer it to sugar for all purposes. We learn that large quantities of excellent honey is available in the Eastern and Western ghats. The systematic collection of wax and honey is well worth the attention of capitalists.

It is strange that so little has been done in the way of interchange of seeds for agricultural purposes between districts or Provinces. It would be a great aid to agriculture if arrangements were made to regularly import seed for sowing from other parts of India, or even from other countries. In Europe and America, the agriculturalist never uses seed grown on his own fields ; the Indian peasant usually does so. As an illustration of the importance of going afar for seed, it may be mentioned that Mr. Pachcha Sahib of Visharam in the North Arcot District, obtained paddy seed from Lahore, Amritsar and other centres in North India, and has introduced them in the Arcot Taluk, with the result that the yield of his lands has almost doubled, and a very high grade of paddy has been harvested. It should be possible to organise an agriculturalist's association for the purpose of collecting and distributing seed, with agents in the Headquarters of every District in the Presidency. Such an arrangement should be able to do much for the Indian agriculturists.

The Mysore State, the Cochin State, and several planters in Travancore and the Anamalais, sent fine specimens of cardamoms.

It should be possible to introduce the growth of these in many of the other hilly parts of the Presidency.

The Government Gardens, Ootacamund, sent a series of exhibits, illustrating the rubber industry. The Conservator of Forests, Coimbatore, and the Tahsildar of Anantapur, also sent specimens of rubber, the Mysore State sent a small exhibit. It is matter for surprise that the cultivation of rubber was not better represented in the Exhibition.

Very good tinned butter was sent by the English Co-operative Dairy Co., and the Champion Dairy Co., of Ahmedabad. The butter and ghee exhibits of the College of Agriculture, Saidapet, and Rungaraju Bros. of Madras, have been specially referred to under Group II. Other and insignificant parcels of ghee and butter were displayed, but call for no special attention.

Messrs. Harrison & Co., Simon & Co. of Madras, and others, had good exhibits of European confectionery.

Curry powders and pastes, chutneys, pickles, jams and jellies and preserved fruits, were sent by Manockjee Poonjiajee & Sons, and the Indian Condiment Co., of Bombay, V. Chelapathi Chetty & Co., and P. Iyasamy & Co. of Madras, the Pioneer Condiment Co., Calcutta, Nandlal Nijjar & Co., of Chamba, V. Krishnair of Pudukkotah and Mrs. Ellwood of Ernakulam. M. Pais & Co. of Mangalore sent some excellent preserved fruit. All these exhibits were of good quality. There is a large export business in these goods to Europe and America, and it is said to be a fact that in some markets, consumers will not purchase these condiments, etc., unless the labels are poorly printed, on common coarse coloured paper, and in bad English! this being looked upon as proof positive that the contents of the bottles were really made in India, and are not European imitations.

The larger manufacturers and exporters of cigars were conspicuous by the absence of their goods from the Exhibition. Some very fair class cigars were sent in by N. A. Parthasaradhy Chetty of Dindigul, H. Jons & Co., Coconada, the Lanka Cigar Factory, D'Cruz & Co. of Coconada, Robinson & Co., and the Hindustan Cigar Co. of Trichinopoly, and T. B. Sundaram Pillai & Co. of Coimbatore.

The exhibits of tobacco in leaf were an exceedingly poor class, and only that shown by Messrs. Robinson & Co., Parthasaradhy Chetty, Dindigul, and the Dewan of Nuzvid, are worthy of any mention here. As a whole, the leaf was dark, harsh, strong, and ill-cured.

Indian-made cigarettes were a better class, those manufactured by Messrs. Pappadopoulous Brothers of Madras from Turkish Tobacco

being especially good, they received the highest award given for tobacco products. The Crown Tobacco Co. and Messrs. Warden & Co. of Bombay and others, sent in well-made and neatly packed cigarettes, which seem about equal to the cheap American articles so largely imported, and which have unfortunately attained such great popularity with the young all over India. Imports of these cigarettes appear to be increasing by leaps and bounds, and there seems no reason why more manufacturing concerns cannot be started to go into competition with the importers of foreign cigarettes. In this Presidency, we have tobacco and cheap labour, so all that appears necessary is the training of a few young men in the altogether special curing, which cigarette tobacco requires.

The coffee and tea exhibits were good. The coffee from Mysore particularly so. But the number of exhibits sent in was very small in view of the extensive cultivation of these articles in the Presidency.

Several exhibits of dried and powdered vegetables, fruits and seeds were sent in by Amersi Limji of Bombay, the Dewan of Cochin, St. Antony's Female Institute, Mr. J. N. Mascarinhas, Proboda Chendra Dey of Rajnagar, Bengal, M. G. Medical Hall, Tellicherry, these comprised dried whole vegetables, dried minced vegetables, plantain flour, Talipot flour and Cassava meal and flour, jaggery mixed with rice flour, and sago flour, etc.

Yams, cocoanuts and other edible roots were largely exhibited. Mangalore sent fine specimens of the creeper potato, and huge yams. These are most nutritious and rich in proteid matter. They are grown very largely in the Canara Districts. All races and castes there eat them freely, and they certainly deserve to be tried in every district of the Presidency.

The exhibits of oils of all kinds formed quite an imposing collection. The Saidapet Agricultural College, the Peer Mahomed Oil Co. of Bombay, the Maharaja of Bobbili, the Mysore and Cochin States, the Dewan of Pudukkota and the Superintendents of the Vellore and Salem Jails sent in interesting collections. The gingely oil from these two prisons was particularly good. It is expressed for the use of the convicts, and is far higher in quality than anything the prisoners are likely to get outside the Jails.

The Saidapet Agricultural Farm, Messrs. Mathardas Gokuldas, Peer Mahomed Mills of Bombay, the Mysore State, Mr. Subba Naicker of Tinnevelly, and others contributed large and interesting collections of oil cakes, some of which are used for human and animal food, and others as manure. The uses of oil cake form a distinct course of study

in the Agricultural College, Saidapet, and much valuable information is being collected regarding their economic value as manures.

As might have been expected, the wheat exhibits from Southern India, both in grain and flour, were insignificant, and poor in quality; but the Howrah Flour Mills Co. sent down some very fine flour, ground from good hard club wheat.

The sugar exhibits from the East India Distilleries and Sugar Factories Co. and from the Deccan Sugar Co. appeared quite equal to the imported article both in colour and granulation; and is doubtless of considerably more food value than the imported beet sugars with which the Indian bazaars are now flooded. The Secretaries of the Exhibition Committees, Berhampore and Cuddapah, exhibited some fine white sugars, the former being apparently factory-made, as it was quite equal to anything in the Exhibition. The sugar-candies and jaggery exhibited by A. Ramalinga Chettiar of Kumbakonam, Mitaya Runganath of Cuddappah and H. D. Chatterjee of Indore and others, were all good. It is surprising that this considerable industry was so little in evidence.

Messrs. Rangiah Gounden & Co. of Ootacamund sent some of their Indian pale ale. This exhibit contained all the properties of a good ale, mild, sparkling, brisk in flavour and without an undue proportion of alcohol.

Vinegar was poorly represented and that shown did not compare at all well with the imported article. There appears no reason why a really sound full strength vinegar of good flavour cannot be made in India at a price which would altogether shut out the foreign-made article.

The condition of the Indigo industry is well illustrated by the paucity of exhibits, and those sent were distinctly inferior, indigo planters in this presidency and elsewhere would do well to devote the greater portion of their estates to other cultivation, for there is no doubt the synathetic article has taken a firm hold of all markets and has come to stay.

Subba Naicker of Tinnevelly contributed specimens of Uppams and Egyptian cottons. The former was a good staple and had evidently been improved by careful selection of seed and cultivation. The Egyptian fibre raised from imported seed was very good and showed no sign of deterioration. M. Gopala Menon of Malabar sent in some good lint in long fine staple. Other exhibits of cotton were uninteresting and inferior.

Gums, resins, tans and dye-stuff were a fairly representative class. Ramasamy Pillai's, K. R. Ranganathan's *Devi Devi* pods were good

and the Myrabolams sent by the Coconada Committee were an excellent sample. The Conservator of Forests, Coimbatore, sent good samples of gums and resins in *Hardwickia-Bipinnata, Ailanthus Malabaricum, kino,* and some others. *Avarum* gum was sent by the Raja of Ettayapuram. *Somida Febrifuga,* somi, bark ; *Acacia Catechu,* cutch, wood and extract ; *Bixia Orellana,* (annatto) seeds ; *Nyctanthis Arbortristis,* Harsingar flower ; *Pterocarpis Santalinus,* Sandal wood, red ; *Rubia Tinctoria,* root madder ; *Morinda Citrifolia,* Al root ; *Woodfordia Floribunda,* flower ; *Cedrela Toona,* flower ; *Cæsalpina Sappan,* Sappan wood ; *Acacia Arabica,* seed, gum, pods. and bark ; *Shorea Talura,* lac, araqu ? ; *Cassia Auriculata,* tanners bark, avarike ; *Carthamus Tinctorius,* safflower ; *Cassia Fistula,* rela bark ; *Quercus Infectorius,* gall-nuts ; *Coccus Cacti,* cochineal ; *Coccus Lacca,* lac, uncleaned, stick, and washed ; and a few others of less importance were shown amongst dye-stuffs and tanning exhibits.

The Dewan of Pudukkota sent a most interesting and varied assortment of nearly 200 kinds of medical plants, herbs, grasses, roots and gums. Nandlal Nijjar and Co. of Chamba, Punjab, sent a small and interesting collection of similar products from the Punjab.

Grasses for medicinal and industrial uses formed a very small section, most of which was of no great interest.

Group VIII.—Leather, Horn, Paper, etc.:—The use of animal skins, preserved from putrefaction in various ways, has come down to us from primitive mankind. In the Rig-Veda, we find mention of leather bottles and water bags. Siva, the Destroyer, appears always wearing a tiger's or deer's skin, or with an elephant's hide for a cloak; and as Bhyrava, and in other forms under which he is worshipped by the Mahrattas, he appears surrounded by attendants bearing chouris of ivory or sandalwood. Sankha Atri and Likhita averred that "water raised in leather buckets was pure and good," and Atri had it, that "water raised by machinery is not polluted." It seems clear therefore that the early Aryans did not consider articles made from hides and skins to be impure. "The feeling against taking life, and using animal products either for food or for the manufacture of dress, shoes, and domestic articles, originated in a later age; when the Aryans had settled down in the hot plains of India, and retained only a faint tradition of those cold, bleak, and hungry regions, beyond the high Northern mountains, from whence their ancestors originally came; and, when living in the midst of a profuse abundance of milk, grains, vegetables and fruit, they could well afford to extend their mercy and charity to the brute creation." This sympathy deepened and ripened until, in the fulness of time, it culminated in Gautama's sacred injunction "*thou shalt not kill.*" Reaction against this stern Budhist philosophy led to the re-establishment of Hinduism in India, but very soon the sanctity of animal life regained its hold on the minds of the people; although the bolder sects of Brahmins of those times "often shocked the public by a reckless disregard of the general teaching and opinion on the subject. Thus, five holy men, the ancestors of the modern Bengali Brahmins, who came from Kanouj about 900 A.D., were dressed in trousers and coats, and wore sacred threads made from deer skin, and they were, for this reason, refused audience by the then king of Bengal until they had proved their Brahminical power by blessing, and so reviving, a piece of dead wood." Shoes and boots were certainly in use in ancient India. When Rama went into exile for fourteen years at the request of his step-mother, to enable his step-brother Bharata to ascend the throne of Oudh; Bharata declined to consent, but persisted in becoming a hermit like his brother; and he governed the kingdom in the name of Rama by putting his shoes upon the throne as the symbol of the rightful sovereign. Shoes, high boots and sandals, appear on the oldest rock and temple statues.

From the very earliest times, cups, water vessels, musical instruments and combs were made from horn. A cup made from the horn of a rhinoceros is said in the Puranas to be "the purest vessel for water which can be used by a Hindu." Arrows were tipped with horn, and

Various Exhibits in a Lower Room.

knives and daggers handled with it. Terry in his voyages to the East Indies in 1655, speaks of cabinets, etc., "curiously inlaid with elephant's teeth or mother-o'-pearl, ebony, or tortoise shell." In the Ayeen-Akbari written by Abul Fazl—1556 to 1605 A.D.,—we learn of "working in horns and ivories, and carving and moulding them in various fashions."

Horn work in India has found its highest development in the beautiful decorated art boxes, etc., with inlays and overlays of ivory, horn, and tortoise shell, and made in Vizagapatam; and which are more particularly alluded to in Section XIII of this report.

This group includes leather, bone, horn, paper and articles made from these. The exhibits sent in were numerous, and on the whole satisfactory. A prominent place was given to the excellent chrome-tanned skins and leathers exhibited by Mr. K. E. Talati, a practical tanner, who has on several occasions drawn the attention of the public, through the Press, to the superiority and economy of chrome tanning. The Americans were the first to take up this form of tanning, and Mr. Talati, having studied the industry in the United States as well as in Europe, has been able to introduce several improvements already.

Chrome tanning is a method of curing skins chemically instead of by soaking them in the usual bark tan liquors, and is far cheaper and much quicker than any other known process. For, what is done by the old system in from six months to twenty-four days, can now be accomplished by the chrome process in the same number of hours! There is still one small difficulty about chrome tanning, these leathers are so very soft that they will not stand "graining," so that, when "grain" is wanted on morocco or other leather, bark tanning must be followed; for this gives a firmer surface, and the graining comes out more fully.

The Americans are said to have completed experiments for making chrome-tanned skins as firm as bark-tanned ones, and able too to stand graining. Already the Local Government has directed its attention to the introduction of chrome and other improved methods of tanning in the Madras School of Arts (in the absence of a proper School of Technology) and, with the trained expert advice now easily available in many parts of India, they must succeed sooner or later. We understand that for some years past, leather that has been put through the first process of chrome tanning, has been regularly shipped by one or two leading firms in Madras.

The Western India Army Boot and Equipment Factory have sent some excellent specimens of their leather goods—also Russia

morocco, calf, butts and other hides, skins and leathers in ordinary and chrome tans. Among other of their exhibits may be mentioned specimens of overland trunks, suit cases, Gladstone and other bags, belts, kit bags, holsters, cigar cases, polo and other saddles, bed-straps, harness and boots and shoes of various kinds. All these articles were in first-rate finish, and durable, and at the same time much cheaper than imported articles of similar class. The best proof of local opinion regarding these goods was the fact that all were sold, and that large trade and retail orders were registered both in and out of the Exhibition.

The Secretary of the Industrial Exhibition Committee, Coconada, exhibited a Python skin, cow-hides, buffalo-hides, goat and sheep skins and frog skins, all remarkably well cured, soft and pliant. The Secretary to the Industrial Exhibition Committee, Cuddapah, sent skins of spotted deer, fine tiger, and squirrels all in very soft finish. Messrs. B. A. Randelia & Co., Bombay, exhibited chrome and alum tanned sheep skin, morocco leather, hides, kid leather, etc., cured by themselves. These were all good of their kind. Messrs. Adamjee Peerbhoy of Bombay exhibited a very large variety of leather wares, saddles, overland trunks, bags, harness, carriage hood leathers, cow and buffalo hides, moroccos, etc ; it was the general opinion that all these goods were in excellent finish, and cheap in comparison with foreign manufactures. They also excelled in good water bags (chagols) made of chrome-tanned hide, here however the chrome tanning seems to be at a distinct disadvantage, for being water-proof, there is little or no exudation from the surface, and therefore no reduction of temperature in the water by evaporation. Messrs. Pir Mahomed Alla Baksh & Co. of Jaipur exhibited a fine old rhinoceros hide shield.

The Superintendent of the Central Jail, Bikaneer, sent a beautiful collection of the local painted skin vessels. These were copies of oil jars, kopis, coojas, shields, abkhoras, water pots, trays, dishes, etc., in many shapes, made of camel skin, and decorated with raised flowers in gilt and painted *gesso* work. This industry originated in the quaint old oil copis, of sheep, goat or camel skin, which the ubiquitous, useful, and ugly kerosine oil tin has shouldered out of the market. The skin, untanned, is boiled until it becomes almost gelatinous, and is then stretched over baked clay moulds layer by layer, until the required thickness has been obtained. When the skin has set and become quite hard and dry, the mould is broken out, and the article cleaned off and decorated. These handsome vessels cannot be used for water, but a special make exists for use as a water vessel. The industry undoubtedly came into Inida from Persia, through Southern Afghanistan,

and was purely a Mahomedan one. These painted vessels are really decorative, and should have appeared in the art ware class.

A few private exhibitors sent in boots and shoes made at Gudivada, Nellore, Malabar and other places. Mysore exhibited some first-rate specimens of Native shoes made at Closepet, Hunsur, etc. The Superintendent of the Salem Central Jail furnished samples of Police shoes. Many local Committees sent country shoes, plain, and decorated in gold and silver, in base metals, leather and silks. All these were excellently made, many artistically decorated, and all found ready sale. The Indian Stores, Ld., sent some very good specimens of harness.

Very few firms contributed specimens of book-binding. The S. P. C. K. Press, Madras, the Codial Bail Press, Mangalore, Messrs. Hoe & Co. and Messrs. V. Venkatakristnama Chetty & Sons of Madras were among the exhibitors. The Codial Bail Press claim to mix a secret powder with the paste used in the binding, and this is said to prevent mould from ever forming in the leather in wet weather. This is probably corrosive sublimate in great dilution. The S. P. C. K. Press, Madras, has always maintained a good reputation as artistic book-binders, and their small exhibit was of a very high class indeed, it secured the gold medal. Messrs. Hoe & Co.'s exhibit was a good one and compared favourably with most others.

Much exhibited under 'horn,' ivory, etc., can only be dealt with in Group XIII, being really fine art specimens. There were a number of minor horn exhibits as back scratchers, buttons in great variety, jewel boxes, scent boxes, powder flasks, combs, and toys of various kinds. Venkateswara Rau Pantulu of Nuzvid exhibited a very beautiful horn tree decorated with snakes, animals, etc., and made from bison horn, it is apparently a copy of the Ratnagiri or Viziadrug work. K. R. Ranganatham & Sons of Madura exhibited some toy scorpions in stained and polished horn. These were remarkably well carved and most realistic.

Stamped, painted and embossed leather goods were very poorly represented. With the good leather and cheap labour available in the Madras Presidency, there appears to be much room for the development of this industry. The Chanda, Udaipur, and Gorakhpore embroidered leather sheets, cushions, belts, table covers, and upholstery pieces, are in regular demand for Europe and America, and the supply of high grade goods in artistic colouring is limited. This applies equally to similar embroidery with applique of various coloured leathers, made in and about Hyderabad-Sindh, Talpur, and Khyrpur. An English firm in Bombay has commenced the manufacture of

embossed, colored, and gilt leather goods, for use in furniture, upholstery, panelling, covers, book cases and covers, blotters, sides of bags, etc., and they are rapidly developing a large business. Almost all their manufactures are said to be exported to London, Paris, and New York.

The painted leather mats, etc., from Nossam in Kurnool, and Hyderabad-Deccan, were interesting, illustrating as they do, the outlines of camels, elephants, horses, etc., formed from the figures of women, grouped in fantastic attitudes; the mythological subjects were also good, but the flower and foliage designs were mostly contemptible in drawing and execution, and in marked contrast to the *gesso* work on wood from these sources.

Group IX. Pottery, Porcelain, Glass:—It is impossible to write much of the past of pottery in India without going for information to Sir Geo. Birdwood's *Industrial Arts of India.* He says:

"Truest to nature, in the directness and simplicity of its forms, and their adaptation to use, and purest in art, of all its homely and sumptuary handicrafts is the pottery of India; the unglazed rude earthenware, red, brown, yellow, or grey, made in every village, and the historical glazed earthenware of Madura, Sindh, and the Panjab. Unglazed pottery is made everywhere in India, and has been from before the time of Manu: and the forms of it shewn on ancient Buddhist aud Hindu sculptures, and the ancient Buddhist paintings of Ajanta, are identical with those still everywhere thrown from the village handwheels. In the sculptures of Bhuvaneswar the form of the *kalasa*, or water jug, is treated with great taste as an architectural decoration, especially in its use as an elegant finial to the temple towers. In the same sculptures is seen the form of another water vessel, identical with the *amriti* or "nectar" bottle, sold in the bazaar of Bengal."

The Madura glazed pottery mentioned above was not in evidence in the Exhibition, but is much the same in form, character and glaze as that sent from Gudiyatam in the North Arcot District.

Mr. T. N. Mukerjee writing of the great antiquity of the glass industry, says:

"As early as eight hundred years before Christ *i.e.*, at the time when the *Yajur-veda* was composed; glass was one of the articles of which female ornaments were made. It is also mentined in the Mahâbhâratha, and in another old book called the *Yuktikalpataru*, the effects on the human system of drinking water out of a glass tumbler are said to be the same as those of drinking from a crystal cup."

Beckmann has observed, "that the discovery of coloured glass must have followed very closely upon that of making glass itself." But it is more than probable that coloured glass was made before the white colourless article; it is very difficult to find unprepared materials pure enough to make colourless glass, and it would be a long time before the original makers discovered the causes of discolouration.

The exhibits in the Pottery class were by no means a representative collection. Mr. Kristna Udayar, of Gudiyatam in North Arcot, exhibited a most interesting collection of good old shapes in the green and brown glazed *Kanigiri* work. This is made from a fine, clean white clay, which fires into a good, firm terra-cotta. It takes glaze well, and the colours used are cool emerald greens, and dull soft browns. A good effect is produced through the running of glaze during firing, the ware thus getting a rich mottled effect. Simple decoration is given by toothing or crimping the

edges, and by stamping patterns on to the soft clay. Some water vessels are made with a perforated, decorated outer shell, which is glazed, the vase itself inside being left porous. These are in constant demand for cool drinking water. It is interesting to note that fortunately little or no attempt has been made to 'improve' this industry. Surgeon-General Bidie claimed that the Vellore pottery was a survival of an indigenous industry, and asserted, doubtless with good reason, that the fictile art had once attained in South India a very high standard of quality. He specially mentions the pottery of Sivaganga, Madura, Udiyagiri, Salem, Vizagapatam, Kistna, Godaveri and others. The habit of constructing large baked earthenware animals, to be placed in sacred groves near human dwellings, may have had much to do with the accumulative style of architecture peculiar to the Dravidians. From about the 14th and 15th centuries terra-cotta Gods and animals, etc., have at all events been extensively used in the ornamentation of both temples and dwelling houses, and the art of glazing pottery, as already remarked, seems to have been spontaneous, not acquired.

The Rev. F. W. Stait of the American Baptist Mission, Udayagiri, Nellore District, sent a collection of interesting unglazed, porous cream-colored pottery. The decoration on this was given with mica dust, laid in simple Arabesque patterns on to the plastic material. This is apparently an imported industry from the North; for much pottery similar in form, character, and decoration is made in the United Provinces, Oudh, and the Punjab. The Superintendent of the Trivandram School of Arts sent in some good decorated pottery, particularly a terra-cotta gargoyle in excellent design. Mr. M. S. Subramania Aiyar of Madras, Cottcalingam Pillai of Tenkasi, Tinnevelly, Subraya Pillai of Chingleput, Mr. P. Narasinga Rau of Narasaraupet, the Secretaries of the Industrial Exhibition Committees, Trichinopoly and Ambasamudram, and some exhibitors of Mysore, sent interesting collections of pottery, most of which appeared to be good. Ghulam Khadir Sahib of Amritsar exhibited a beautiful old Chinese porcelain bowl decorated in gold and colours, which, bearing as it did, Persian and Urdu inscriptions, probably came into the Panjab through the North. It is unfortunate that no history of this fine old piece was sent down. It apparently dates from the beginning of the 18th century.

The School of Arts and P. M. A. Baksh & Co. both of Jaipore, exhibited some fair specimens of Jaipore pottery, so called, the vessels are really made from powdered felspar mixed with rice, flour paste, or potato starch, and the pieces are rarely formed on the potters wheel, most being moulded. This is quite a novel industry, and was introduced into Delhi and Jaipore some fifty years ago by one Bhola, a

potter. The Jaipore ware, decorated in two shades of blue on a white field, is always cool-looking and pleasing; this cannot however be said of the weak attempts to copy Persian models and colouring, which characterise so much of the ware as now produced. Efforts are also being made in Jaipore to imitate the Khurja and Mooltan styles of glazed true pottery.

GLASS WARE.—There is very little of this to notice. The Exhibition Committees of Penukonda, Chittoor, Nellore, Cuddapah, Vellore, Trichinopoly, and some exhibitors in Tirupur, sent collections of bangles, beads, small blown bottles, etc., and glasses and glass fluxes and sands. Some of the bangles were excellent in form, colour and decoration; others were poor attempts at copying the "made in Germany" bangles. Mr. Ruchiram Sahai of Lahore sent a number of glass flasks and vessels made in the old Punjab style which were interesting and decorative.

Glass ware in quaint forms of cups, bottles, various jars and flagons, balls and ornaments are made in Pudukottah, Vellore, Salem, Trichinopoly, Anantapur and Chennapatna, Kumsi and Yellandur in Mysore. These are nsually more or less brittle owing to imperfect annealing. The vessels were usually in shades of green and red.

It is surprising that no serious attempt has been made to turn out Indian made glass ware of some economic value. The imports of glass into the country are enormous, and with the exception of a few spasmodic attempts,—most of which have died for want of sufficient capital nothing appears to have been done to capture this industry for the country. It is in decently made, and stout annealed glass ware for the commonest uses, that the hope of an indigenous industry lies, such articles as lamp chimneys, phials, bottles, tumblers, small sheet glass for window panes, etc., should be aimed at, and not caricatures of higher grade goods.

MODELLING IN CLAYS.—This art was very poorly represented, most of the exhibits being from the Kala Bhavan and Shivalal Ugarchand Bhatt of Baroda, Rajaratnammal of Chittapur and Shunmugam Chettiar of Muraiyur, all sent in some fair exhibits, those from the Kala Bhavan were the best shown.

Group X. Metals:—The winning and working of metals is one of the oldest and most important of the Industries of the Country.

Articles of metal have been made in this country from very ancient times. In the *Rig-Veda*, golden cups are alluded to. *Twashtâ*, the Vulcan of the Hindu mythology, acquired great celebrity for his skill in metals, but was surpassed by the Ribhus in the art of making sacrificial vessels from wood and metal, *Twashtâ* is said to have once sought to kill his rivals, and on another occasion to have praised their designs and the brilliant results of their skill. Vessels made of gold, silver and inferior metals, are frequently mentioned and described in the oldest religious books of the East. In the *Kâtikâ Purâna,* vessels of gold are said to remove excesses of the three humours, and to promote strength of vision ; those of silver are claimed to be propitious and inimical to bile, but likely to increase secretion of phlegm ; vessels of bronze, are agreeable and improve the mind, and very unfavourable to undue excitement of blood and bile ; those of brass, are said to be irritating, and hot, and therefore heat and phlegm destroying ; those of magnetic iron, most beneficial in overcoming anasarca, jaundice, and anæmia ; those of stone or clay were inauspicious, and vessels of wood wholesome, invigorating and poison-destroying.

In the Buddhist period, we find metallic vessels in as universal use as they are at the present day.

Some shapes evidently had their origin in shells and rinds of fruits like those of melons, gourds, etc., leaves of trees, flowers, as the lotus and lily ; and in vessels of bone, and the horns of animals used as household utensils. Gourds, leaves, etc., are still in use, and are held sacred, employed for religious purposes, and used by the highest castes. Ascetics, who devote their lives to studying the sacred books, worship and pilgrimage, still use gourd shells (kamandalas) as water vessels, preferring these to their stronger imitations in metal. The eating of food from platters and cups of leaves, and the drinking of water poured from a hollowed rhinoceros horn, is most acceptable to the gods. Conservatism here, as elsewhere, has steadily made a compromise with knowledge and progress. Bit by bit it had to give way, reluctantly allow the development of the leaf into the stone plate, then the stone platter into the clay plate, this into the wooden dish, and so on to the copper and brass platter, cooking pot, and cup. At this time, patience had been exhausted ; and when the early Aryans in their travels through the Himalayas found copper, they at once hailed it as the long wanted material for the manufacture of articles of domestic use.

The only notice of gold plate in the Rig-Veda is an allusion to golden cups; but the references in the other epics, to plate and jewellery are so numerous, that it is evident the precious metals must have been known and used in India for drinking vessels, and for other domestic utensils from the first settlement of the Aryas in the country. Gold is a favourite simile in the Rig-Veda for the rising sun; and the wheels and yokes of carriages are described as made of gold. The Râmâyana and Mahâbhârata offer abundant evidence that, at the period when they were compiled, the Hindus were perfectly familiar with magnificent articles in gold and silver in very great variety. Unfortunately hardly any specimens of the precious metals, that can be admitted to be authentic examples of ancient Indian art, have survived the wreck of time. It may be that some linger hidden within the shrines of the more sequestered of the great idol temples, and are known only to the priests, who would naturally regard such with much reverence, and be unwilling to permit their existence to be known, or to expose them to the vulgar gaze of those without the pale.

Metal vessels in a native household supply the joint places of porcelain, glass and plate in European families. There is hardly any one so poor, but he has a few brass pots, if no more than the *lota* "chembu" in which he boils his porridge, cooks his curries, drinks his water or milk, and holds water to wash in. The wealthier a man is, the better equipped is his house in metal vessels. In the kitchen of a big house, the array of brass trays and vessels, cooking pots and water holders, all scoured bright with earth every day or oftener, is quite formidable. The higher classes use silver drinking cups and some articles of silver for cooking and for eating from; but the staple article is brass or copper, for brass is the Hindu metal *par excellence*, and though it is preferred plain for household purposes; being more easily cleaned as Hindu usage ordains, it is sometimes richly chased and decorated. Muhammadans generally use copper vessels, which are usually tinned.

Water vessels or chembus, dishes, cups, bowls, candlesticks, lamps, images of the gods, temple bells and gongs, sacrificial spoons, censers, and other sacred and domestic utensils in gold, silver, brass and copper, are made all over India, and in much the same patterns and styles as we find in representations of them, on the oldest Buddhist and Hindu sculpture and cave paintings.

It is said, that glass and European crockery are coming more and more into use, even amongst those who have not adopted European manners and customs.

The lamps employed in a great house where European candles

and lamps have not found their way, are the fine old style large brass candelabra with broad dishes below, and a number of little lamp branches above, all filled with oil, and having a wick in the spout of each oil-holding dish. Brass vessels are sold by weight, so much being allowed extra for workmanship. They are cast and turned, and now often spun on spinning lathes, or made from imported sheet metal.

IRON AND STEEL.—Iron has always played a comparatively small part in Indian domestic economy and its principal uses have been for agricultural implements, artizan's tools, arms and armour.

The *Agni Purâna* gives an elaborate classification of weapons, and they appear in every variety of form on the most ancient monuments of the country. Indian steel has been celebrated from the earliest antiquity, and the blades of Damascus, which maintained their pre-eminence even after the blades of Toledo became celebrated, were in fact of Indian steel. "The Ondanique of Marco Polo's travels refers originally, as Colonel Yule has shewn, to Indian steel, the word being a corruption of the persian *Handwaniy, i.e.*, Indian steel. The same word found its way into Spanish, in the shapes of *Alhinde* and *Alfinde*, first with the meaning of steel, then of a steel mirror, and finally of the metal foil of a glass mirror. Arrian mentions Indian steel as imported into the Abyssinian ports; and Salmasius said that among the surviving Greek treatises was one "on the tempering of Indian steel."

The Dimdurti mines on the Gôdaveri were a source of Damascus steel, the mines there being mere holes dug through the thin granitic soil, from which the ore was detached by small iron crow bars. The iron ore was still further separated from its granitic or quartzy matrix by washing; and the sand thus obtained was quite recently manufactured into Damascus steel at Kona Samundram, near Dimdurti. The sand was melted with charcoal, without any flux, and obtained at once in a perfectly tough and malleable state, superior to any English iron, or even the best Swedish. The Persian (Armenian) merchants, who in Voysey's days still frequented the iron furnaces of Kona Samundram, informed him that they had in vain attempted to imitate the steel formed from it in Persia. In the manufacture of the best steel three-fourths of Samundram metal was used, and one-fourth of an iron stone from Indore, which was a peroxide of iron.

Excellent steel for sword blades was also made in Mysore, and it has been claimed that the great sword of Sultana Chand Bee of Bijapur was forged of Mysore steel obtained from Chitaldroog; samples of very fine Mysore steel ingots were exhibited by a smelter of Holalkere, Chitaldroog.

Very good brass work is also made at Nellore ; but those of Madura, Tirupati and Tanjore are superior to all, and the finest in India. In bold forms, and elaborately inwrought ornamentation the Tanjore-Madura work recalls the descriptions by Homer of the work of the artists of Sidon in bowls of antique form. Some are simply etched, and others deeply cut in mythological designs, many are diapered all over with *crustæ*, of the leaf pattern seen in Assyrian sculptures, copper on brass, or silver on copper, producing an effect often of quite regal grandeur. This use of two metals in juxtaposition is known in Northern India as "Ganga-jamnaji," from the confluence of these two rivers at Allahabad, where these different coloured streams flow side by side for over a mile.

This class is so comprehensive and all embracing in the immense variety of the articles included in it, that we shall, for the purpose of this report, divide the group into three sections ; these are :

(*a*) Art metal work of all kinds, excluding gold, silver and jewellery ; and arms and armour.

(*b*) Metal goods for economic uses, and objects and implements of worship.

(*c*) Jewellery, gold and silver wares.

ART METAL WORK, ARMS AND ARMOUR.—P. M. A. Baksh & Co., Nur Bux, Khuda Bux & Co. of Jaipur, exhibited large collections of Indian and Persian style arms and armour, comprising swords, daggers, kathars, guns, jambeas, knives, tegas, battle-axes, ankus, maces, snakeswords, spears, kookries, khunjars ; and some armour and head pieces. With a few decent exceptions, these appeared to be copies made from low grade metal for decorative purposes ; and especially for sale to tourists and visitors. Partial proof of this, it is said, can be found in the fact that many tubular handles of battle-axes, maces, etc., are made of old iron pipe rejections from the Jaipore Gas Works. The forms too of many of the pieces exhibited are certainly not those of old arms. The ageing of new copies of old Indian weapons has become quite an art in Jaipore, Hyderabad, etc., and adds of course very much to the sale value of such articles in business with the ignorant and unwary. Illustrations of this were in evidence at the Exhibition. The decoration of many of these pieces was most inferior. It may be mentioned that many of the articles were decorated in the ordinary shallow *koft* work ; pattern being scratched on to the ground, and the thinnest of gold or silver wire hammered into it. Thus, the article cannot receive a really fine polish without rubbing away the filament of wire inlay. Many of the pieces exhibited were decorated in *Dewáti*, lowest grade of all inlay on to iron or steel,

This is prepared by simply scratching the surface of the iron with a graving point to form the pattern, the work is then heated almost to redness, and gold or silver leaf is lightly hammered into the pattern ; being then rubbed with a polishing stone, the gold only remains on that portion of the surface which has been scratched to receive it. In the Jeypore arms exhibits, there were but a few pieces of the real old *Teh Nishán* or deep cut *koft* work.

S. M. Prasad of Benares, P. L. M. Shunmugam Chettiar of Muraiyur, S. Arunachellam & Sons of Salem, Mr. G. Krishnamachariar of Hyderabad, Deccan, sent good collections of various arms, many of these were old and of considerable value, they were mostly in forms peculiar to South India. The Dewan of Pudukottah sent some interesting knives and some good old weapons. M. Venkateswara Rau Pantulu of Nuzvid exhibited a small collection of very excellent old arms in considerable variety. The blades and the decoration of these were alike good. His Excellency the Governor of Madras contributed a finely decorated presentation sword made in Kurnool, this was an excellent piece of modern work in both metal and decoration. The second Prince of Karvetnagar, North Arcot, had a quaint old poiniard with two pistol barrels attached to it—an old copy evidently of an antique Persian weapon, of which there are examples in His Highness the Nizam's armoury. The very beautiful old spears and ankus contributed by the Rajah Sahib of Ettaiyapuram, were catalogued under Group IV and are described under that head.

ARTICLES OF METAL USED IN WORSHIP, AND FIGURES.—The Cochin State contributed some very beautiful figures of Parasurama, Ganapatty, Sri Rama, Sri Kristna, and some very fine examples of antique bronzes ; a temple, etc., being specially good. Most of these were recent finds during excavations in the state.

The small Mysore exhibit was excellent in form and finish and the work there should be capable of large developments. A very fine tray,in bold, sharp floral repousse work, was sent by Mr. E. Maconochie, I.C.S., of Mysore. The Madras School of Arts contributed some handsome articles, amongst which we would specially instance repousse worked trays in generally, very high relief, and a centre piece which was excellent in conception and workmanship. Also some copies of the quaint old Vizagapatam brass figures illustrating armed Mahrattas, Pathans, Khandanis, Hubshis and European troops as they appeared at the end of the 18th century. These were exceedingly good and attracted much attention. They are illustrated in Sir George Birdwood's "Industrial Arts of India," and, as it is said that the Vizagapatam collection is the only complete one now remaining in India, it

Metal, Carved Stoneware, Small Wood-work, Lacquers, etc.

is fortunate that the School of Arts has taken up the making of these copies. The originals of this collection were exhibited by Her Highness the Maharani Gajapathi Rau of Vizianagram, so that it was possible to compare these excellent copies with the originals. A good bronze bust of His Majesty the King-Emperor, from a plaster model, was also exhibited by the School of Arts. It was successfully cast and finished, and is a good illustration of what the Indian moulder and brass founder can do under capable direction. The pickling and colour of this bronze were alike good. The School of Arts received no prizes, as, for some reason or other all the exhibits "were not for competition."

The Secretary, Indian Exhibition Committee, Coconada, the Coronation Depôt of Palghat, the Indian Stores Ld., Calcutta, S. M. Prasad of Benares, the Aryan Furniture Factory, Madras, the Secretary, Indian Exhibition Committee, Ambasamudram, P. L. C. Shunmugam Chettiar of Muraiyur and K. R. Ranganatha Bros. of Madura, all exhibited collections of brass, copper, and mixed metal idols, implements and objects of temple worship, most of which were well made and finished, and some were undoubted and faithful copies of really interesting and good antiques.

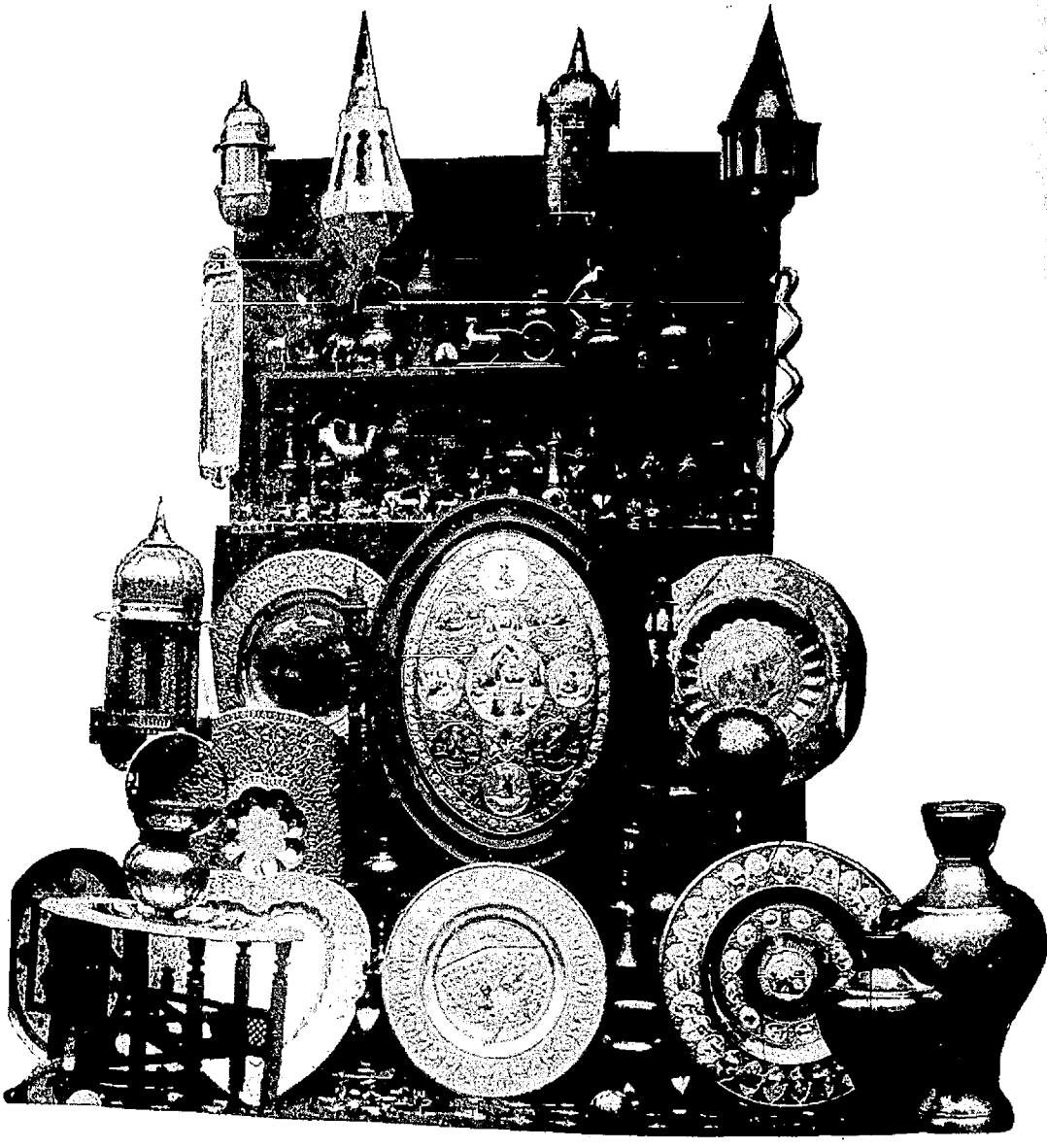
But by far the best and largest collection of Exhibits under this head was sent in by the Exhibition Committee, Tirupati, and comprised some very beautiful examples. The School of Arts, Jain Vaidya & Co., S. Zoroster & Co., P. M. A. Baksh & Co., Nur Bux Khuda Bux & Co., all of Jaipore, sent large and varied assortments of brass wares. Under this head were comprised miniature brass birds, animals, idols, animals with and without harness, trappings and carts; and some human figures. The modelling of these articles was almost always quaint and good; but a large proportion of them were sadly wanting in finish. Mr. A. Sankariah of Trichoor, sent a fine polished bronze mirror set in decorated brass, evidently a copy from an old piece.

TRAYS, PLAQUES, LAMPS, VASES, KOMANDELS, JARS, SHIELDS.—The Superintendent of the School of Arts, Jaipore, contributed quite the largest collection of decorated brass ware in great variety. We venture to point out however, that while most of the shapes remained good, the quality of the decorative detail is,—if the School's exhibit may be taken as fairly representative—steadily falling off; for there was nothing in the collection which approached in detail or finish to the fine pieces in the Jaipore Museum and elsewhere, and which have from time to time been made in that city, some of them under the direction of Sir Swinton Jacob and Colonel Hendley. Amongst the best of the pieces exhibited we would instance the large brass vase, illustrating in

high relief, scenes from that grand old epic, the Râmâyana. There was a good tray on which was depicted Râvana as a Sanyâsi with his begging bowl, appearing before Sita's hut. Another tray had battle scenes from the Hindu epics. There were also one or two astronomical trays illustrating the sun governing the Zodiac, the outer circle of decoration bearing the twenty eight stars, *Asvani, Bharani,* etc., including *Abhijit* between *Revati* and *Asvani.* The central object in this tray is *Suryavâsi,* the Sun-god, being driven by *Aruna* in the one wheeled chariot of light, and drawn by the seven-headed horse. In another tray, Vishnu is seen sleeping in the bed provided by the seven-headed serpent, *Adisesha,* while *Lakshmi* sits at his feet, and the all powerful *Brahma* appears seated high overhead on a lotus flower. S. Zoraster & Co. of Jaipore exhibited sun and moon god lamps, as chariots, drawn by horses, bulls or deer; also a number of articles of fair quality, and much after the style of the Jaipore Art School exhibits.

The Madura Technical Institute sent a large brass Puja Mantapam in cast, chased, and hammered metal. It contained a sanctum sanctorum, and had a portico. The roof was supported on brass pillars bearing human and animal figures, those of the gods *Ganapathi* and *Subramanya* being in copper. While the conception and style of this large model were in excellent taste, it is regrettable to have to notice the very careless way in which many details were attended to, the joining up of the various parts was most carelessly done, and detracted much from the appearance of the model. The School of Arts, Jaipore, and dealers there, contributed perforated brass hanging and ball lanterns, mostly in good old Persian shapes and styles. It is unfortunate however that so little attention was paid to the chasing on these exhibits, and that the perforated pattern in most of them was by no means so cleanly cut as it might have been. Some of the brass repousse trays were in fair finish, others were lacking in detail, and it was evident that attempts had been made to make up for this with thin bald surface engraving, which detracted from, rather than added to value. Some good trays, lamps, plates, kamandalams and vases—many in characteristic Dravidian decoration—were exhibited by, among others, G. V. Venkannah of Chicacole, the Coronation Depôt, Palghaut, Mr. G. Krishnamachariar of Hyderabad, Deccan, the Central Museum, Nagpore, and the Exhibition Committees of Vizagapatam and Trichinopoly.

Tanjore encrusted work in the present style was fairly well represented. This industry is suffering keenly from competition and the consequent demand for cheapness. The silver plates, which used to be fairly substantial and in *repousse-work*, are now about the thickness



Beaten and Lac filled Brassware.

of ordinary note paper, and are "struck up" with steel dies. The Ganga-Jamnaji copper on brass class of this work is little better, fifty thin pieces of patterned metal can be struck up on the die, while one is being properly beaten up in relief.

BIDRI WORK was poorly represented. One Hussain Ali of Lucknow, and Mr. G. Krishnamachariar of Hyderabad-Deccan, were the only exhibitors. In 1817, this industry was entirely in the hands of Hindus, since then however, Mahomedans have taken it up. In the pieces exhibited,—except in the case of a few fine old examples, most of which were secured for the Madras Museum—the inlaid or encrusted plates of silver were very thin, and not likely to stand much use. The base of the Bidri metal, is zinc, to which, tin, copper, antimony and lead, are added in varying proportions. The *Zarboolan* form of Bidri work much resembles Tanjore work in the mode of application of its ornament.

Bells and gongs were exhibited in very limited variety and there was nothing in them to need special mention.

LAC-DECORATED AND CHASED METAL WORK :—The Jaipore exhibitors sent collections of Jaipore made "Moradabad" work in considerable variety. A few of these pieces were in the good old Moradabad styles, colouring, and patterns; *marori*, *bidri*, and *charakwan*. But unfortunately most of the exhibits were decorated in hard staring colours, and in most questionable taste. A harsh green, a glaring pink, and a hard chalky white, are colours which appear to have become quite characteristic of the present style of Jaipore work. It is difficult to understand how it is that Jaipore dealers have taken to this falsely named "fire enamelling in all colours;" and one can only assume there is truth in the statement that globe-trotters in their ignorance have been led to confuse this work with the fine Jaipore *champlevé* enamels on gold, and purchase it largely, as "Jaipore enamel on brass"! It is unfortunate that none of the best class of this work was exhibited by the leading Moradabad makers.

Rallaram and Motilal of Sialkot, Abbas Ali of Gujrat, and the Superintendent, School of Arts, Trivandrum, contributed some fair specimens of true *Koft* work. One or two pieces from the Travancore School of Arts were quite the best; this Institution is to be congratulated on the *Koft* work it is producing, especially if, as we understand, the industry has only just been taken up by the School.

(*b*) METAL GOODS FOR ECONOMIC USES :—Messrs. D. Raju and Co., of Madras, exhibited some very good castings from their foundry. A large circular ventilator plate in particular, was remarkably well cast, every detail in the fine arabesque pattern being very

clearly brought out. Some garden seats too, and a fountain were quite equal to English castings, as were other exhibits from this firm. The Kala Bhavan of Baroda also sent in some good, clean, sharp castings, including a good stove.

Articles in most metals for domestic uses were in endless variety, and it is impossible to describe them in detail in the limited space available. We instance bell-metal thambalam and other articles sent by Mr. P. L. C. Shunmuga Chettiar of Murayur ; a bell-metal chembu, etc., sent by the Secretary of the Ambasamudram Committee ; brass and bell-metal pots, tumblers and other vessels sent by the Kumbakonam Committee ; excellent brass vessels and plain and decorated sthalis, etc., sent by the Trichinopoly Committee ; the bell-metal kinnams, spoons, lotas, gindis and tumblers, etc., sent by the Calicut Committee ; the artistic bell-metal betel plates and kinnams sent by the Chairman, Municipal Council, Calicut ; and the bell-metal vessels, kinnams, etc., sent by the Secretary, Industrial Exhibition Committee, North Malabar, the brass pandans and the brass utensils exhibited by most of the abovenamed, and some others. Some excellent lamps in the old Hindu style, with and without decorated pillars, were also exhibited by the Secretary, Industrial Exhibition Committee, Ambasamudram, the Secretary, Industrial Exhibition Committee, Vellore, the Secretary, Industrial Exhibition Committee, Trichinopoly, Mr. P. L. C. Arumugam Chettiar of Murayur, the Secretary, Industrial Exhibition Committee, Kumbakonam, the Secretary, Industrial Exhibition Committee, Calicut, and several others.

Messrs. Arunachellam and Sons of Salem, the School of Arts, Jaipore, the Agricultural Society of Penukonda, Mr. Venkatrama Aiyar of Nellore, the Tahsildar of Adoni, Hussain Sahib of Shikarpore, Mysore, and others, exhibited various articles of cutlery. Those from Messrs. Arunachellam and Sons being particularly good. This firm has an old established reputation for shikari implements which it appears to be maintaining. The other exhibits in this section call for no special notice.

The Godrej and Boyce Manufacturing Co., Bombay, sent in a varied and interesting collection of their locks and safes. These locks are for almost every possible purpose, and are in many sizes. Included in the collection are several new and improved forms of locks, patented and invented by Mr. Godrej himself. The iron safes sent in by this firm were also very good, and the judges, recognising the high quality of their exhibits awarded them a gold medal for locks, and another for their safes. Messrs. Ghose Das & Co. of Calcutta, exhibited through the Indian Stores Co., Ld., some of their excellent locks, which we

understand have been adopted by the Bengal and Assam Governments for all official uses. Messrs. Harichand Mancharam and Sons of Bombay, T. Appavu Asari of the Technical Institute, Madura, O. Senjoo Chetty & Co., Madras, Adaikalam Asari of Pudukkota, P. L. M. Muthayya Chetty & Co. of Madras, and some others, contributed iron safes, most of which were well made, and fitted with excellent locks, some of which were made by the exhibitors.

Arokya Asari of Mayavaram, exhibited what he calls a 'time lock.' This has a clock attached to it and the time at which the lock is to be opened has to be set on the dial face before closing the lock. This is ingenious, but is neither more nor less than a modification of an alarm clock attached to a lock. The South Indian Press and Workshops, Shoolai, Madras, contributed some well-made padlocks and other locks in the usual form. T. S. Katherasan Asari of Viruthipatty, sent a "dial lever letter lock" which also needs a key to open it. It is a modification of the American letter combination locks, and was well-made and finished.

Messrs. Sankaralingam Asari and Bros. of Dindigul, exhibited some good locks, amongst them is a style called by them the "detecto." This is similar to the lock they made for the Conjeevaram temples; the treasure-house there is in the custody of seven trustees, and the lock is so made that the doors cannot be opened unless the keys of all seven are present, and are put into the lock one after the other in pre-arranged order. They also exhibited special "secure" cup-board drawer and almyra locks with very long bolts. In the Mysore section were exhibited a good safe, and some locks, including some quaint old fashioned screw ones. The Kala Bhavan of Baroda sent excellent copies of high class English locks.

Aluminium ware was not much in evidence; that sent in was all fairly well-made and finished. Messrs. Ghulam Hussain & Bros. of Karachi, displayed an excellent assortment of strong, well-finished steel trunks, despatch boxes, hat, bonnet, collar and tie boxes, etc.; this firm claims to import a special quality of mild steel sheet for their manufactures; the japanning, gilding and finish of their goods is excellent, and compares well with similar imported articles, local appreciation of these goods was marked by the fact that they were all sold. Mr. Jangli Shah of Murshidabad sent a number of well-finished steel trunks of his own manufacture. These were much after the style of the imported article but much lighter and cheaper.

(*c*) JEWELLERY; GOLD AND SILVER WARES:—The exhibits in fine gold jewellery were very disappointing, and there was nothing in this Section which calls for very much attention. A number of

private exhibitors, Superintendents of Industrial Schools, Local Committees and Chairmen of Municipal Councils, contributed gold jewellery, both for European and Indian use, in considerable variety, comprising gold rakadai, gold and silver belt clasps, buttons, studs, links, golden roses, topaz, garnet, amethyst, turquoise and other semi-gems in necklaces, brouchets, etc. The Dewan of Cochin exhibited a gold gemmed ring, set in the centre of which is a very small and artistic figure of Venugopala. Mr. T. P. Venkatesam Chetty of Kumbakonam contributed a small collection of artistic jewellery in varied forms. A handsome garuda bird set with gems, and with arrangements for expanding and closing the wings was also exhibited, but we are unable to trace the name of the sender. The Maharajah of Bobbili sent a most artistic gold chain which was promptly secured by the Baroda Museum. A number of silver and metal gilt pieces of jewellery, mostly in old South Indian forms, were interesting, and in considerable variety of form and purpose.

There was little or no gold plate exhibited, beyond a few articles of no special importance, some pieces of base metals, and silver which had been electro or fire gilt, were on the stalls.

Silver plate, in almost every style and form peculiar to Southern and Western India, was much in evidence ; a great many pieces were of high merit and compared favorably with any old specimens we have seen. A Chamandi silver over-door panel, with a Trisula, in chased repoussé work, and set in a carved wooden frame, was sent in by the Mysore State, whose patron goddess was very skilfully depicted. Other excellent exhibits from this State comprised models of elephants, trays, plaques, idols, etc.; one eccentric model elephant was for use as a pandan. The nut, condiments and leaf were contained in a drawer inside the animal, the elephant's tail forming the handle, and an ankus carried by the mahut being a pan needle. The Dewan of Mysore contributed a handsome mantapam in gold, and another smaller elephant pandan, also in gold. Messrs. Subrayachetty & Bros., of Mysore, sent some quaint little images of Gopalakristna, Rajyalakshmi, Saraswati, Ganesh, etc., all of which sold as watch charms. The loan collection of silver and gold shown by Sir P. N. Krishnamurty, K.C.I.E., Dewan of Mysore, was a very good and representative one, the silver boxes, Krishna on a banyan leaf, the plate from Sravana Belgola, and the modelled figure exhibits being specially interesting.

Messrs. Barton, Sons & Co. of Bangalore, had a large show-case full of very beautifully conceived and finished pieces of silver ware, many of which were quite original in design. They included four splendid sporting trophies, representing a branch of their business to

which the firm devotes considerable attention. This exhibit was distinctly the best shown ; modelling, form, detail, finish, all being of the highest order, and the judges fully recognised this by awarding them the gold medal for silver ware.

Mr. Daday Khan and Messrs. T. R. Tawker and Sons, both of Mount Road, Madras, and Mr. Krishniah Chetty of Bangalore, sent in remarkably good collections of their silver wares. The judges evidently found it difficult to discriminate between these three firms, for they were each awarded a silver medal. Mr. Daday Khan's tea trays representing scenes from every day Indian life, jungle design punch bowl, swami work tea service, cigar box and tea caddy, were all very artistic in design, in excellent clean sharp detail, and good finish. Messrs. Tawker and Sons' toilet set, gold gilt claret jug, rose water sprinkler, bowl, and a fine silver tray, were worthy of notice. Mr. Krishniah Chetty's silver Chamandi and Ranganayakulu caskets, tea and coffee service, and mirror frame also deserve special mention.

S. Murugesa Bather and Co., Royapetta, Madras, contributed amongst other good exhibits, a particularly beautiful rosewater sprinkler. A silver Dasâvataram tray illustrating the avatars of Vishnu, a cabinet photo frame designed from some details of the Madura Temples, and some very effective silver belt clasps were all good and well finished.

Dewan Bahadur P. Rajaratna Mudaliar Avergal, C.I.E., exhibited a decorative and artistic silver scent stand in tree form, with a well-moulded peacock on the top ; also a very effectively designed silver spice box.

The Carnatic Warehouse, Framji Pestonji Bhumgara, Manika Asari, Chinnasami Asari, all of Madras, the Supdt., School of Arts, Trivandram, Mr. G. Kristnamachariar of Hyderabad-Deccan, the Nuzvid Sub-committee, the Trichinopoly and Berhampore Committees and several others, showed collections of silver ware in fair quality and usually in good shapes.

Mersrs. Omersi Mowji and Sons of Bhuj-Kach, sent a few pieces of their characteristic silver ware, in excellent form and fine finish. It is interesting to notice the marked similarity between the decoration of the Kach ware, and the floral forms appearing on old Dutch silver.

There were no specimens of Kashmir or Panjab metal work in the Exhibition. Some good pieces of Bengal hammered, and chiselled work were contributed by Haridas Sahu of Calcutta, in copper figures, etc., electro-silvered and gilt. Manika Asari of Madras sent in framed portraits in beaten silver of H.M. The King-Emperor, Queen Alexandra,

H.H. the Maharajah of Mysore, also similar pictures of Sarada, Saraswathi, Lakshmi and other Gods. He also exhibited a repoussé picture of the Big Mosque in Triplicane, Madras. The best of the Godaveri District silver exhibit was purchased for the Mysore Museum.

The Kala Bhavan of Baroda exhibited models of Simhasana and Asana covered with beaten silver plates, these are seats used by the Hindus on sacred occasions; there was no special artistic merit in them, but they are said to be faithful copies of very old articles.

The Travancore School of Arts contributed a small but interesting collection of silver things peculiar to that State, notably garlands, necklaces; bracelets, and spoons made from chakrams; a quaintly shaped betel-leaf tray, etc.

The Trichinopoly Committee exhibited a handsome silver casket in swami work, with a bull on each corner, which attracted some attention. Some boxes in fine pierced and hammered silver were exhibited by the Vizagapatam Committee and purchased for the Mysore Museum. S. Kasirani Pandya of Tanjore exhibited silver covers for a blotting case, which were well designed and finished, and merited attention. Sugar basins made from ostrich eggs, and mounted in silver, were shown by several exhibitors, and these were well carved and finished. Sugar basins, tobacco jars and other articles made from nicely carved cocoanut shells, and mounted in silver and in silver plate, were exhibited by the Cannanore Jail and several other exhibitors, and these appeared to find ready market here; There was however not one piece of the fine delicate cocoanut shell carving that used, a few years ago, to be procurable in North Canara.

It may be mentioned that the finish of the Madras silver ware appears to be steadily improving. All the leading manufacturers are attending carefully to such matters as joints, the fitting of hinges and covers, the proper finishing and burnishing of bright parts, etc., with the result that, so far as these points are concerned, South Indian silver is distinctly in advance of any made elsewhere in the country; but, it may be pointed out that efforts to secure very high-relief work are not often successful, flowers, foliage, figures, all lose character and detail, when beaten too high above the surface of the metal. It is usually the buyer and not the producer that is responsible for this. Many persons will not buy swami silver ware—no matter how good it may be—unless it is in excessively high-relief, and the makers point to really good specimens of their work which have been made to order and then refused for this cause alone. There is also evidence of a craze on the part of the public to crowd decoration on to swami silver, which seems a mistake.

Group XI.—Chemical Industries:—Scents, Perfumes, Essences, Soaps, Medicines, etc.: There were not many exhibitors in these goods. and the collections they sent, varied as they were, did not appear particularly representative. Mr. H. Bose of Calcutta, who we understand was enterprising enough to go to England and the Continent, and underwent a thorough training in the laboratories of some of the best wholesale perfumers ; secured the gold medal for a collection of perfumes for Indian use and tastes, but generally made according to the European manner. Most of these were excellent, and we understand that, as a result of his venture, he has secured large and regular business connections in the Madras Presidency and in Mysore. We instance among other scents and toilet preparations contributed by him Musk-Lavender, Lily, Jambuline, Florida water, Jessamine, Eau-de-cologne, Milk of Roses, Hair-oils, Pomades, etc. We understand Mr. Bose does a considerable business with China, Japan, the Straits Settlements, Burma, Siam, Saigon, Java, and the United States.

Messrs. T. A. Rahiman & Sons of Madras, contributed a good collection of purely Indian perfumes, comprising Musk in various forms, Rose, Orange, Lime, Jasmine, Tuberose and other Attars ; Attar pastes, thick Rose and other Cosmetics, perfumed artificial flowers and garlands, and imitation jewels loaded with scents.

P. Dorasami Aiyer of Madras, Srinivasa Ranga Chariar of Mysore, Patchameah Sahib of Pudukkota, and others, sent collections of good Indian Perfumes and Attars. The Kaiser Soap Manufacturing Co. of Calcutta,exhibited European style Scents and Cosmetics in fairly varied assortment. H. Bana & Co., of Navsari, Bombay, sent a small assortment of their Pomades, which appeared good. The Dewan of Pudukkota sent Attar-billais, Garlands, Boquets, Basmams, Lemongrass essence and oil and other perfumes.

The Bengal Soap Co. and Messrs. M. Thacker & Co., of Bombay, contributed household and various forms of toilet soaps in excellent quality and made by themselves. These exhibits secured respectively the gold and silver medals. Other exhibitors of soap were, the Diamond Soap Co., B. L. C. Amin & Co. of Bombay, who exhibited soaps of different kinds in considerable variety. Kisori Lal Jaini exhibited excellent scented hair oils. Sandalwood incense sticks, cakes, and paste were contributed by various exhibitors in Mysore.

Mr. T. Brown of Carolina Estate, Nilgiris,exhibited some excellent Eucalyptus oil, Var-Citriodora. This appeared quite equal in colour, strength, and odour to the best of the oils imported from Australia.

Every nation prefers when possible to use its own indigenous medicines, and India is no exception to this rule. The Ayurvedic School, especially in Bengal, is attempting to re-introduce the use of many of the half-forgotten drugs of ancient India; and there are staunch adherents of this system in Southern India, who are prescribing and manufacturing remedies according to the Ayurvedic Pharmacopœia. They allege that for many complaints their medicines are far better than European drugs. Rajah Rungiah Appa Rau Bahadur of Nuzvid exhibited a case containing no less than 56 different kinds of physic according to this school. Kempamia Pandit of Mysore showed what he claims to be a specific for consumption, called *Kanda Cushmandarasayanam*; this is said to be prepared from the white gourd; the Pandit has attained such a reputation in Mysore, that His Highness the Maharajah has placed him in charge of the "Indigenous Hospital" in Mysore City, and provided him with funds for distributing his remedies amongst the poorer classes.

The Rev. Father Muller of the Mangalore Mission exhibited his "tissue remedies" in sets of twelve bottles each, these are supposed to cure thoroughly "all the ills that flesh is heir to." The theory of "the tissue school" is, "that the human body can be reduced by cremation to twelve original salts, and that the existence of any disease indicates the want of one or more of these salts in the system." The Rev. Father also exhibited homeopathic drugs in cases of 24, 50 and 90 bottles. "Muller's other specifics" were also exhibited, each set of these comprises thirty three medicines for internal, and four for external use. It is difficult for the uninitiated to understand the need for other specifics, if certain cures for all ailments can be assured by the tissue remedies; but doubtless, explanations can be given which entirely satisfy those who have faith in this system of treatment.

Dr. H. L. Batliwalla, of Bombay, exhibited his ague mixture and pills. These are well-known in Western India, and are believed in by many people as certain remedies for malarious, intermittent and bilious fevers.

Balwant Rai Prabhulal & Co., of Wadwan, Kathiawar, exhibited twenty-five different basmams, mixtures and ointments, which they claim to be specifics for many ailments. Several firms in Bombay and Bengal sent patent mixtures, powders and ointments of which little is known here.

Wax candles of good appearance were exhibited by Mr. Motilal K. Shah of Ahmedabad, Messrs. Correa & Co., of Mangalore, Mr. A. Sankara Aiyar of Trichoor, the Secretary, Industrial Exhibition Committee, Ambasamudram, and others. The Manager of the Gujarat

Candle Factory sent some good candles; also an interesting case representing the suggested utilization of the wastes of various industries, bone-ashes, super-phosphates and other manures, asbestos, cements, freezing and insulating mixtures, mica tiles, etc.

Writing inks, boot and shoe polishes, etc., were exhibited by Messrs. Hoe & Co., B. Dorasamy Aiyar, both of Madras, also by Rustom Bros. and Dasabhai H. Gimi of Bombay, K. D. Daniel and R. Banerji of Calcutta and others.

The Amrit Match Factory of Kota, Central Provinces, sent good Indian made matches which secured the gold medal. Matches of fair quality were also sent by Gokhal Brothers of Vyara, Baroda.

Made up Dyes and Chemical Dye-stuffs were very poorly represented. The Kala Bhavan of Baroda sent eight specimens in a case, and the Diamond Soap Co. of Bombay exhibited their "Diamond-ready dyes."

The best collection of manures in the Exhibition was that from the Agricultural Farm at Saidapet, which contained specimens of the various available oil cakes, and of other manures, animal, vegetable and mineral. The Pudukkota State displayed a few specimens of these manures which we understand have been tried there. It is unfortunate that no report on their value as manures accompanied any of the samples sent in.

Messrs. Parry & Co., Madras, agents for the Presidency Manure Works, exhibited a case illustrating the various articles they manufacture including phosphatic nodules, ground and vitriolized, bone meals, muriate of potash, sulphate of potash, etc.

Groups XII and XIII. Furniture and Decorations, and Fine Arts:—Simple as Aryan life in ancient India was, it gave more than a little scope and work to the village carpenter, who was an important member of the community. He was called the *Sutradhar* or the "holder of line," for he made chariots for the warriors, and was also, by virtue of his profession, the non-combatant driver of them in peace and in war. He thus came into the thick of the battle, and all unarmed as he was, the reluctance to kill a defenceless man, which usually regulated the conduct of Indian warriors, was not extended to him. Hence, in the accounts of the great battles described in the *Mahâbhârata* and other Indian epics, we are told that fighting often began with attempts to either spear the enemy s carpenter-charioteers, or to decapitate them with arrows, bearing crescent shaped heads, and fired from great bows. Carpenters are mentioned in the *Rig-Veda*, and at the time of the Institutes of Manu they were sufficiently numerous to be recognised as a separate caste. Besides carts and chariots, the carpenter was required to make bedsteads, thrones, couches, sofas, benches, hindoras, chairs, stools, and seats, in many forms and patterns. He was also responsible for the making and keeping in order of the wooden agricultural and domestic implements of the community. The carving and decoration of idols from the proper woods, cut at the proper time, and seasoned in the proper way, was also a part of his duty. He too, made and decorated the doors, windows, chaukats, balconies, cornices, pillars, beams, etc., needed by his neighbours, for the sovereign, and for the temples. The legs of furniture were often carved into the form of tigers or lions' paws, or eagles' claws; and the ends of rails, arm rests, or bars were frequently finished with alligators, snakes or eagles' heads, the two former being often known as "makara muka." We are told by Sir George Birdwood, in "The Industrial Arts of India," that according to the Brihat Sanhita, a celebrated work on Astronomy by Varaha Mihira, which dates from the sixth century A.D., the woods most esteemed by the Hindus of India for furniture were *Asana* (Pentaptera Tomentosa), *Syandana* (Dalbergia Oojeinensis), *Chandan* (Santalum album, Sandalwood), *Haridra* (Mesua Ferrea), *Suradaru* (Pinus Deodara) *Tinduki* (Diospyros glutinosa), *Sala* (Shorea Robusta), *Gambhar*, or *Kasmari* (Gmelina Arborea) *Aujana* (Michælia Champacaquery, Memecylon Tinctorium) *Padmaka* (?) *Taka* (Tectona Grandis, teak), and *Sinsapa*, (Dalbergia sps., blackwood). *Tun* (Cedrela Toona), and *Phanas* (Artocarpus integrifolia), both now much used in Indian furniture, are not, it will be observed, named in this list.

The Silpa Sastra, on mechanics and architecture, and also some of the Puranas, gave detailed directions for felling these trees at

particular seasons, when their circulation was inactive; and for seasoning the wood afterwards, so as to prevent unequal contraction and cracking. Trees which had been struck by lightning, or thrown down by inundations, storms or elephants; which had fallen towards the South quarter (Yama's); or grew on burial, burning, or other holy grounds, or at the confluence of great rivers, or by the roadside; or which were withered at the top, or entangled with heavy creepers; or which had become the habitation of birds, or bees, etc., could not be used. Some trees such as the *gambhar*, *asana* and sandalwood were most auspicious when used singly; others when used jointly, as teak with *Sal*, and *Haridra* with *Kadamba*. *Sinaspa*, (*i.e.*, blackwood) and mango wood were never used singly.

Bedstead legs were often carved, the foot being usually made into the shape of a lion's paw. They were often mounted or inlaid with gold, jewels, and ivory. Thrones were made of many shapes, and each pattern had a distinct name. Dr. Râjendra Lâla Mitra has much to say about these in his "Indo-Aryans"; The name of the throne (*Sinhâsana*) is supposed to have been derived from the images of the lion (*Sinha*), which originally formed its supports; but the secondary meaning of a state chair or throne soon set aside the derivative meaning of a lion seat, and such solicistic words as *Padma Sinhâsana*, 'lotus lion seat,' *Gaja Sinhâsana*, 'elephant lion seat,' got into currency from the earliest times. The objects ordinarily selected for the decoration of the legs were images of lotuses, conch-shells, elephants, geese, lions, peacocks, eagles, pitchers, deer, horses, etc., The thrones were named differently according to the forms in which the legs were carved. Thus a throne made of *Gambhâr* wood with mountings of gold and rubies, had the sides festooned with carvings of lotus flowers, the feet were shaped like lotus buds; and it was named the 'lotus throne.' Its lining was of scarlet cloth, and the supports of the frame work were eight to twelve human figures, each twelve fingers long. Another throne made also of *Gambhâr* wood had silver and crystal mountings, white lining, and carvings of shells on the frame and feet, was styled the 'conch-shell,' (*Sankha Sinhâsana*); it had twenty seven figured supports. A throne made of jackwood, with gold, amethyst, coral and lapis lazuli mountings, scarlet cloth lining, and carvings of lines of elephants on the frame, and of elephant heads at the feet, was described as the 'elephant throne.' The 'goose throne' (*Hansa Sinhâsana*) was so called from having figures of geese carved on the frame and on the feet. It was made of *Sal* wood mounted with gold, topazes, and agates, and was lined with yellow cloth; it had twenty-one human figures for supports. Another 'elephant throne' was made of sandalwood, mounted with gold, diamonds,

mother-o'-pearl, was lined with white cloth, it had, as its name implies, carvings of elephants on the frame and on the feet, and there were twenty-one human figures as supports. The 'pitcher throne' (*Ghata Sinhâsana*) was made of *Champak* wood, and mounted with gold and emeralds; rows of pitchers were carved on the frame, lotus buds on the feet, and it had blue cloth for lining; its figured supports numbered twenty two. When the throne happened to be made of *Nim* wood (Melia Azadirachta) it was mounted with gold and sapphires, had a border of carved deer on the frame, deer heads on the feet, and was lined with blue cloth, this was known as a 'deer throne,' (*Mriga Sinhâsana*). When made of the *Haridra* wood, mounted with gold and divers kinds of jewels, lined with various colored cloth, and carved with figures of horses and horses' head for feet, it was called a 'horse throne' (*Haya Sinhâsana*); and it had no less than seventy-four human figures under it.

Writing of Indian sculpture from the European standard of Art Sir George Birdwood says:—

"It is very surprising that a people who possess, as their ivory and stone carvings and clay figures incontestably prove, so great a facility in the appreciation and delineation of natural forms should have failed to develop the art of figure sculpture. Nowhere does their figure sculpture show the inspiration of true art. They seem to have no feeling for it. They usually only attempt a literal transcript of the human form, and of the forms of animals, for the purpose of making toys and curiosities, almost exclusively for sale to English people. Otherwise they use these sculptured forms only in architecture, and the tendency is to subordinate them strictly to the architecture. The treatment of them thus rapidly becomes decorative and conventional. Their very gods are distinguished only by their attributes and symbolical eccentricities of body, and never by any expression of individual and personal character. So foreign to the Hindus is the idea of figure sculpture in the æsthetic sense, that in the noblest temples the idol is often found to be only a symbol. It is owing to the very fact of their being condemned to a strictly ritualistic representation of their gods, that the feeling for the higher forms of sculpture has been destroyed in them. How completely their figure sculpture fails in true art is seen at once when they attempt to produce it on a natural or heroic scale; and it is only because their ivory and clay and stone figures of men and animals are on so minute a scale that they excite admiration. Their larger figure sculpture is indeed never pleasing, except when treated conventionally."

These remarks apply with equal force to the human figure class of ornamentation in wood carving.

FURNITURE, CARPENTRY, AND CABINET-WORK.—The objects comprised in this class are closely associated with the comfort, con-

venience, and ornamentation of our dwellings ; of considerable importance from the amount of skilled labour employed in their production and adornment ; and of great interest, as displaying clear evidence of the state of domestic art in the country.

Popular taste must always be more or less influenced by those articles which are constantly before the eye as household companions, in the manufacture of these it is therefore most essential to attend carefully to the principles of artistic and skilful design ; for it is by the following of these principles, that an article in daily use obtains its power of attraction, and its value as an educator of public taste.

It is important, for both the strength and good effect of furniture, that the principles of sound construction be well carried out, that the construction itself be evident, and, if carving, mouldings, or other ornament be introduced, it should be by decorating that construction, and not by overloading, overlaying, or attempting to disguise and hide it.

It is by no means necessary that artistic furniture should be covered with ornament, or be extravagant in form to obtain the element of beauty ; articles of furniture are too often crowded with unnecessary embellishments, which not only add to cost, but often interfere seriously with use, purpose, and convenience. The perfection of decorative art here, as elsewhere, consists in combining, with the greatest possible effect, the useful with the decorative, and the attainment of this is usually secured by adopting the simplest, most natural, and most direct methods.

European cabinet furniture first became an article of general luxury about the middle of the 15th century ; at this time inlaid as well as carved and decorative furniture, was made in Italy, and in parts of Germany and Austria, and was frequently exported to the rest of Europe, and to the East.

It is not possible here to go into the details of fine cabinet manufacture, but a few words regarding one or two of the more ornamental decorative and accessory processes may be useful and interesting, especially as some of these are little known in India.

Amongst them the Marqueterie inlay is one of the most beautiful and interesting. In this work the design, having been first drawn full size on paper, and properly coloured, is pricked with a fine needle, so that the outline can be pounced on to the various coloured woods that are to be employed, as well as on to the surface of the article itself ; these outlines being carefully marked are cut out with a fine fret saw. In many cases the wood forming the ground is cut along with that forming the ornament ; so that a piece cut out of brown wood for the ground,

corresponds exactly in shape and size with the opening left in yellow wood into which it fits, and thus forms the necessary pattern.

Tarsia or Pique-work, or the art of inlaying woods, was practised in Italy from very early times, and remains of this class of work as revived by Fra Giovanni di Verona, still exist in some of the old Italian palaces and churches, some very fine old specimens are said to be in the possession of the Shah of Persia. The earlier specimens of this work were executed in woods of different shades, ivory and horn, but of the natural hues unstained ; afterwards, when flowers, birds, and multi-coloured ornaments were introduced, various stained and dyed woods came into use ; these in most cases had the great disadvantage of fading. Shading is given by scorching the. woods in heated sand. The various parts, being cut out of the required tints in the proper shapes, are then put together, and fixed on to paper ; afterwards they are applied. like veneer, to the piece of furniture : being mounted, they are cleaned off and slightly polished, and the fine lines of pattern are then often over-engraved.

Immediately connected with these forms of inlay is Parqueterie, which is principally used for floors, and for dadoes, table tops, or skirtings. In this work the same principle is carried out as in Marqueterie, only upon a much bolder scale ; woods in varying colours are cut to pattern and laid one against the other, or otherwise so arranged as to produce very beautiful and interesting effects.

The class of inlay, which we describe below under its specially Indian and Persian form, is also practised in Bavaria, Siena, Paris, Wurttemburg, Dresden, Barcelona, St. Petersburg, and Vienna; and a quaint little industry of this kind, mostly in woods alone, also exists at Tunbridge Wells in England.

Cabinet making of very useful and artistic character, has long been made in Great Britain, the efforts of Chippendale, Sheraton, Conway, Eastlake and others, have done much in the past to give graceful form and character to the English School of Furniture Design.

The Indian carpenter and cabinet-maker rarely has any opportunity for training in the principles of design and construction as applied to furniture ; he is often an excellent and conscientious imitator, but that is generally all. So long as this is the case we cannot expect much beyond slavishly correct copying from him, for, all untrained as he is, his attempts at originality of form and ornamentation will usually lack character, and be often in direct opposition to the principles of correct construction, and therefore of applied decoration. It is strange that there has never been any attempt to create an Indian School of Furniture Design.

Ivories, Sandal, Tarsia Work, Marble Figures, etc.

Very fair furniture is made in Madras and Calcutta, and to a less extent in Bombay, but it is, almost everywhere, characterized by servile imitation of European forms, sometimes in by no means good taste.

Of course for the houses of conservative Hindus, there are certain forms of domestic furniture in common use, which have the sanction of time-honored custom. But the average drawing room of an Indian gentleman of means and position rarely contains any furniture that has been designed with reference to either Indian inherited tastes, to the many forms of Indian decoration, or to the many examples of interesting and artistic indigenous forms with which he is in daily contact.

Mr. Lewis F. Day in his latest and very valuable work, "Ornament and its Application" says :—

"The proverbial distinction between use and ornament points to a mistaken but very prevalent idea that ornament is a sort of after-thought, a something added to a thing after it is made. Absurd as this misunderstanding is, it is quite a common one even with persons of intelligence, who are misled, perhaps, by the use of the word "applied" design. It is however, by no means in the sense of added or superfluous ornament that artists use the term. It is not to the ornament but to the art that they refer as being appplied or adapted to some decorative purpose—surely a perfectly natural and clearly comprehensible use of the word.

"*All* art, it has been said, is in some sense applied. That may be so. Still, practically speaking, there *is* a difference between the art, let us say, of the modern painter or illustrator and the art of the decorator—still more of the designer of things manufactured. To pretend otherwise is to create a confusion in which discussion of the subject becomes hopeless. Some other term might possibly be found, "concerted" for example, would quite express the kind of art—art working, that is to say, in concert with some craft or useful purpose—and would definitely dissociate it from the art which has only to play its own fiddle. But fantastic terms are better avoided ; and "applied" art does well enough to distinguish the art of the modest member of a band from that of the soloists ; it is in use, and we may as well accept it. On no account, however, must it be taken to imply that ornament is separable from its use. It is not ornament until it is applied. The purpose to which it is to be put determines it from the very beginning. It is neither an after-thought nor an added something, but inherent in the design of the thing to which we say it is "applied" ; it is not so much extra to it as a modification of it in the interest of beauty.

"The designer is influenced in the very choice of his material by its colour and texture, by the ease with which it can be cut, beaten, or otherwise worked into the shape which is at once practically useful and artistically sufficing. In so far as his plan is affected by considerations not purely utilitarian, he is engaged from the beginning in ornamental design ; and in so far as such design

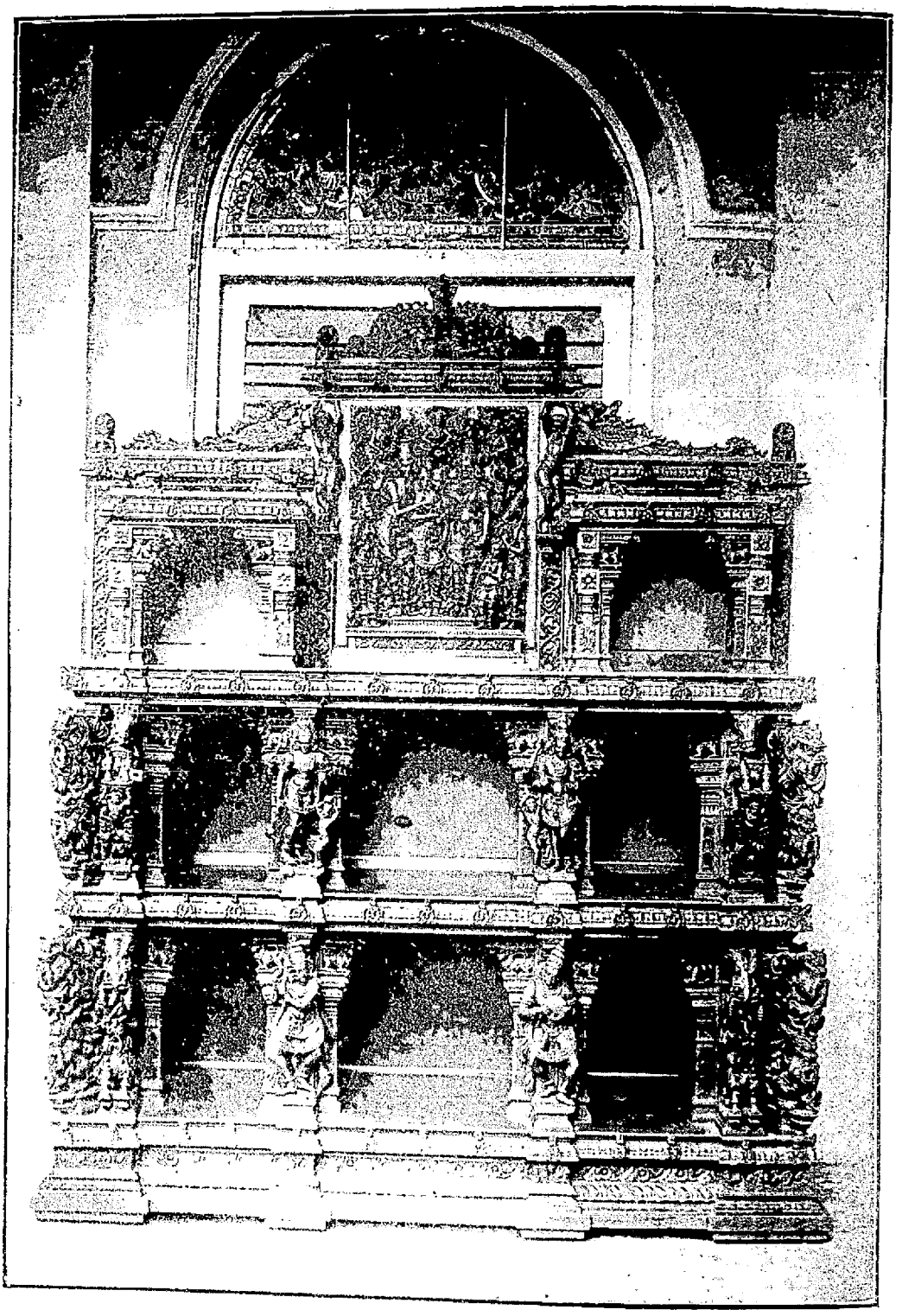
is schemed with a view to its practical purpose, it is in the strictest sense applied. To shape a thing beautifully is no less "applied" design than to ornament it after it is made.

* * "The Joiner who is not content simply to frame his door together strongly, but is careful as to the proportion of its panels, is engaged in applied design before ever he bethinks him of ornamental chamfering. And in softening off the sharp edges of his stiles in that way, he is at once forestalling injury to them, and further applying his artistic powers to practical purpose, which he does again when he proceeds to make ornamental use of the broad bands of iron by which the wooden framework is in one instance strengthened." * *

"The problem of the artist not connected with manufacture and who executes, it may be, his design with his own hands, will be in many respects different; but in his case, no less than in that of the man who works for a trade, applied design is always the solution of a problem. Such and such things being so and so, given such facilities, failing such other possibilities, what is to be done? He answers the question according to his art—but according to his intelligence also. Applied design makes never-ending demand upon common sense, a faculty which was never common, least of all among artists. That is why draughtsmanship is so much more frequently to be met with than design—a matter of feeling, no doubt, but of feeling under control, or perhaps more strictly speaking of feeling and reason combined, of Logic as well as of Art."

"This logical side of the designer's faculty is not commonly enough recognised. In acknowledging the *art* of design we do not sufficiently appreciate the element of science which goes to it—which goes, it might be said, to achievement in art generally, but which is indispensable in art applied—the faculty, in fact, which guides us in its application, which steadies us and keeps us sober. Arab art, as we call it, which is more consistently ornamental than any other, is the work of a mathematical race if not of mathematicians. The orderliness essential to ornament generally is more a matter of the mind than of emotion. It may be doubted if any one will ever be very successful in applied design who is not capable of thinking out a question, balancing with something like precision what is for and what is against a step in design before he takes it. Applied design may or may not be imaginative, it must be logical." * *

Sandalwood and other wood carving in India is as ancient as the temple architecture and the sculptured stone idols in which it probably originated. The Canara and Mysore work is in high relief and deeply cut, and the subjects are mixed floral and mythological; for instance, Krishna and the Gopees, represented, not architecturally, but naturally disporting themselves in a luxuriant wood, in which each tree, while treated conventionally, and merging into the general floral decoration, can be distinctly recognised. A line is drawn below the wood, and through the compartment thus formed a river is represented flowing,



Blackwood Cabinet from Madura.

as on Greek coins, by an undulating band, upon which tortoises, fishes, and water-fowls are carved in half relief.

Dr. Bidie says that " the designs are floral and mythological, and worked out with great minuteness, and are really more remarkable as examples of patience than as works of art." The Mysore carvings are reported as " elaborate and minute, representing figures in Hindu mythology, skilfully encircled by intricate foliage, with figures of animals in relief. The details are grouped with quite an Eastern skill, and form an exceedingly rich ornamentation." To us the best of the Mysore work appeals because it is illustrative of patient and perhaps laboured art, but certainly art of a high order.

In a large and fairly comprehensive collection of exhibits of plain and carved furniture, the Technical Institute, Madura, and the School of Arts, Madras, were well in front of all other competitors, although several other exhibitors were well represented in the quality, pattern and finish of their goods. With a few exceptions, the absence of furniture which was not copied from modern European pattern books, or was not in the ordinary and inartistic forms of the Indian Bazaars, was very marked.

The Madura Technical Institute exhibit was a small one, and we think this large and well-known Industrial Art School might well have sent a much more representative collection. Their piece-de-resistance was a large open cabinet or side-board in blackwood, it was in the style of the floridly decorated, and solid, heavy, stone buildings of Southern India ; Every one of the details appeared to have been taken from the Madura temples. In view of the wealth of decorative ornament available in Madura it is perhaps unfortunate that more variety was not introduced into the fine grotesque figure carvings on the cabinet. The carving was bold and spirited, full of crisp clean-cut detail, and the joinery very good. It is interesting to note that there was no attempt to hide the beautiful veinings in the wood by the usual smearing of cocoanut oil. This cabinet very properly secured the only gold medal awarded for furniture. The Institute also exhibited a number of carved tables with elephant trunks as legs, the table tops of others rested upon dragons, and some on quaint human figures. All these were good in design and finish, but the effect would have been better if the shallow surface carving had been omitted from the tops of the tables. There was also a well-finished teakwood screen.

His Excellency Lord Ampthill exhibited a teakwood table made to his order at Madura in dragon-elephant design. It was an excellent specimen of Madura work but this also we think, was not improved by the thin surface carving on the table top.

The School of Arts, Madras, contributed a very good collection of fine art furniture exhibits, including a handsome blackwood cabinet bearing Hindu mythological decoration, in delicate white wood inlay. The grandfather clock cases were in excellent design. One was decorated with repoussé copper panels, and had a well-carved base bearing a scene from the coronation of Sri Rama. The other, made for a corner, was in blackwood richly inlaid with white cedar, in fine sharp detail. There were two folding blackwood screens. The panels in these were in fine copper repoussé work, we think the carving on the frame of one of them was heavy and uninteresting. Several standard lamp-stands in Chalukyan dragon form, were well designed, and in good spirited carving. One of the handsomest pieces in the collection was a beautiful blackwood side-board, decorated with fine copper repoussé panels. The screens with raised and painted gesso work panels were excellent in design, but we, in common with most others who saw them, thought the colouring was hard and harsh; the greens and pinks being especially so.

We cannot but express regret that the excellent School of Art exhibits were not permitted to come into competition with similar goods from other sources; as all the exhibits from this school entered for competition at the Delhi Art Exhibition, it is clear no question of principle was involved in the refusal to compete.

A quaint decorative wall fixture was exhibited by H. H. the Raja of Cochin. It rested upon an elaborately carved blackwood-stand, from which sprang two very fine Indian elephant tusks decorated with silver, and forming an arch. Below, were two well-carved figures of *Lakshmi* on decorated bases, ornamented with interesting mythological details. Wreaths of flowers and foliage connecting the two sides of the arch were beautifully carved from a single piece of teakwood. A fine elephant head canopy in gaudy silver gilt work was hung in the centre of this uncommon piece of furniture. This exhibit was certainly not improved by the very glass like polish that had been given to it.

The Cannanore Central Jail exhibited some strong, sound and well-made furniture, comprising teapoys, teakwood, blackwood and cedarwood chairs in various patterns, camp furniture of all kinds stationery cases, office boxes, photo frames, etc. We cannot congratulate the Superintendent upon the inlaid furniture, and the painted and stained imitation inlay work that were exhibited; these were neither in good taste nor design. The best piece in the collection was a carved writing table, which was fairly good.

Messrs. Deschamps & Co., Madras, one of the oldest furniture houses in India, exhibited among other articles, a blackwood pier table

with Hindu decoration. This was really well made and finished, as was a side-board exhibited by them. One of the most practical pieces of furniture in the Exhibition was this firm's useful "Vakils," writing table. They also exhibited a Venetian blind made after the Paris fashion. It is surprising that these blinds have not been generally adopted in India. They are easily made, easily kept in order and repaired, and can be adjusted to admit just as much light as is wanted; a vast improvement on the universal chick-blind of the country.

The Madras and Vellore Jails exhibited some tables, carved and other teapoys, and some with heavy inlaid decoration, some furniture with very ordinary fret-work and carved ornament, bamboo brackets, flowerstands, chairs, etc. The plain furniture was all well shaped, made and finished, but the more ornamental goods were not particularly attractive.

The Kala Bhavan, Baroda, sent a good exhibit in excellently carved models of fine art doors and choukats, from some examples in the new Palace, a very good blackwood carved flower vase, and some teakwood carved brackets, also an excellent teakwood bureau in XVIII century Teutonic style, and a few other pieces.

The Anjuman-i-Mufid-i-Ahla-i-Islam of Madras, sent from its Technical School a blackwood Singamon box, a satinwood stationery cabinet, a useful lady's writing table, and some other good examples of their work.

The Rev. Canon Margoschis' Industrial School, Nazareth, sent some very fair carvings in clock case, photo and picture frames, brackets, book racks, etc., also despatch and other boxes. There was nothing special in the character of the carving, although there are excellent *motifs* to be found in Tinnevelly.

The Mission Schools, Tumkur and Karur, the Exhibition Committee, Calicut, and Zoraster & Co. of Jaipur, all exhibited some fairly made furniture, in many shapes and for many uses.

P. N. Thambiappa Naicker & Co. of Madras and P. L. M. Shunmugam Chettiar of Murayur, exhibited jewellery show-cases, book-cases, teapoys and cabinets of fair quality.

The Rev. E. P. Hotten of the American Mission, Manamadura, showed two very good book or Koran stands and some wooden puzzles. Several Madras firms, including the Aryan Furniture Factory, contributed a number of exhibits of well-made and useful furniture, none of which rquire any special mention here.

The Mysore exhibit in furniture was not very large but what was sent was really interesting. The Palace Division, Public Works

Department, sent a beautiful exhibit, mostly blackwood inlaid with whitewood, or lac-filled engraved ivory. The teapoys, scent boxes, picture frames, etc., were distinctly good in conception and finish. This undoubtedly Arab industry probably originated in Mysore with the Muhammadan invasion, and the conventional Mughlai and Carnatic patterns are still much in evidence. The doors at the tomb of Tippu Sultan are excellent examples of the older forms of this class of ornament; and the fine new palace doors will illustrate its present condition.

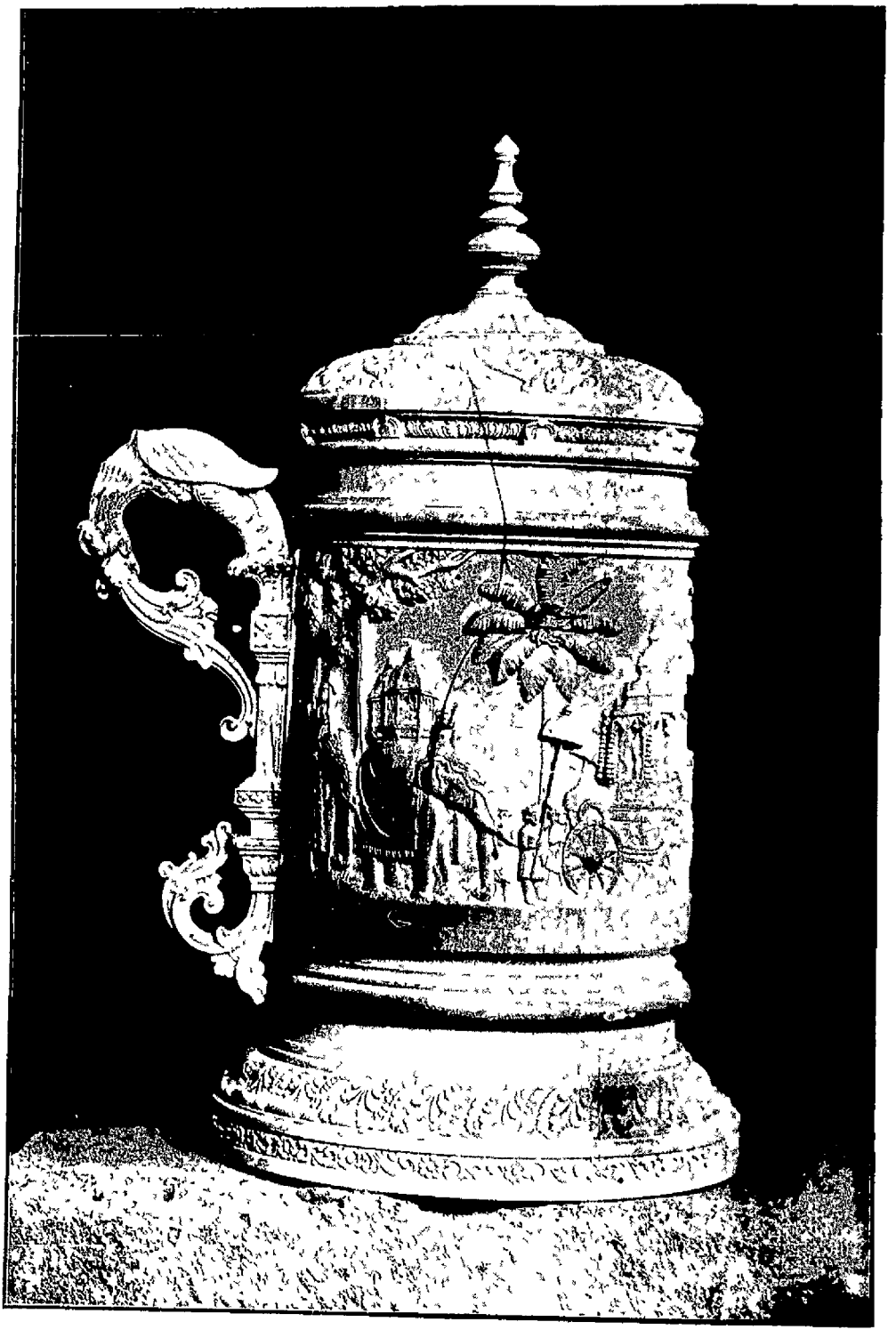
The Jubilee Hall, Mysore, sent a number of similar exhibits which were very creditable. There appeared in some of these to be a tendency to rather overdo the ivory and whitewood inlay, and in some cases the inlaid pattern was too large and bold, giving a distinctly patchy effect to the whole article.

In Mynpuri and Philibhit, in the United Provinces, we find a form of Buhl or wire inlay, which probably came into the country with Arab or Persian immigrants, for it is much like the wire inlaid wood work made in Tunis, Algeria, Morocco, and Egypt. The best of the Mynpuri form of this work is frequently associated with clean cut carving, full of detail and character.

Hard dark wood, well seasoned, usually Sisham (*Dalbergia Latifolia*) is used. The design is first traced on the wood, a sharp cutting tool is then run along the pencilled lines of the drawing, and fine flattened brass, silver, or copper wire is laid, and then hammered, into the cut pattern. Small points and tiny coils of wire are used with excellent effect, to break the monotonous appearance of the thin and glistening lines of geometrical or foliated pattern. There are two or three Muhammedans in Madras who have taken up this trade and are able to turn out very fair work. Sir George Birdwood thinks that the name of this industry, "*tarkashi*" or "wire work," may suggest the possible etymology of the word *tarsia*.

An interesting modification of this work has been introduced into Travancore by the School of Arts there, a very beautiful specimen of it in copper inlay was shewn at the Delhi Exhibition.

CARVED AND INLAID ARTICLES OF IVORY, SANDALWOOD, COCOANUT, TORTOISE-SHELL AND STONE.—The School of Arts, Trivandrum, was much in evidence, by reason of its very beautiful ivory exhibits, proving beyond doubt that the carved ivory produced in this State is second to none other in India; indeed for careful design, grace, and feeling, it is probably unique. The beautiful carved tankard which so justly earned the gold medal, was as perfect in form as in decoration, and was quite worthy of the artizans who made and designed the magnificent collection of ivories which earned such high



Ivory Tankard from Travancore.

commendation at the Delhi Exhibition of 1903. This tankard has on it a representation of the State procession of His Highness the Maharajah in wonderfully clear-cut crisp detail. It was secured by the Superintendent of the Madras Museum, through whose courtesy we have been permitted to photograph it for this report. But this was not the only fine piece of ivory ware exhibited by the School. The Dasâvatâram set of ten figures, the Sri Rama set of six figures, the oval mirror frame, and the ivory backed brush, were all equally good. Sir George Watt, writing of Travancore ivory work, says: "it has borrowed nothing from foreign influence," and, he adds, that "greater attention is paid to statuary in Travancore than in any other centre of Indian ivory carving," and, speaking of the two great styles of South India, he says, "Travancore, true to its ancient conventional designs and Mysore modern jungle scenery, in which a high proficiency has been attained both in sandalwood and ivory."

Other ivory exhibits under this section were the engraved and inlaid-ivory, ebony, sandal and tortoise-shell work exhibited by G. Ramalingam of Vizagapatam (gold medal) and G. C. Veerannah (silver medal), G. Lakshmiah and the Secretary, Industrial Exhibition Committee, Vizagapatam and Golthy Canniah. Carving in ivory by M. Subramanya Asari, through the Rajah of Ettayapuram, and sandalwood by G. Subramayya of Soraba, Shimoga, Mysore.

The specimens contributed by the two medallists were specially good. The effect of the graceful scroll work in ivory laid over the tortoise-shell, dark horn or sandalwood, was excellent, and the over-engraving, on the bands and medallions within the scroll work was delicate and refined in character. The low flat style of decoration on chairs, boxes, etc., was in good taste and the lac-filled black and coloured ornament rich looking and subdued in effect.

The carving from Mysore, much of which has been spoken of in Group V. was of a very high order. We would instance specially the spandril illustrating young Kristna sporting with the Gopees. The carving in this was exquisite. Birds, animals, fish in the river, all, were rejoicing in the sport of the young God; where all was so good, it is difficult to select other subjects for description. We may note in passing, that while the jungle forms illustrate a really good, yet comparatively modern form of wood-carving, much of the rest is in the old Chaylukyan form of the Dravidian style, and it is interesting to note that there is no trace in it of the patch work decoration, and admixture of many styles and periods, which characterizes so much of the sandal and other carving in Western India. Very beautifully carved caskets, cabinets, book covers, etc., also formed part of the excellent and most interesting Mysore Exhibit.

The Mysore State has among its subjects a race of artists in wood and ivory carving known as Gudikâras, or Chitrakâra. These mostly hail from the village of Sorab in the Shimoga District. Their traditions lead one to believe that they have been practising ivory and sandalwood carving from very early times. Some members of this sept are found in Bellary and in other districts bordering on the Mysore country; but these men appear to have lost most of their artistic instincts, and their work is distinctly inferior in quality. It is unfortunate that most of the skilful Mysore Gudikâras have inherited laziness and a taste for drink, and it is said that only the stimulus of State Authority keeps them regularly at their work.

An interesting miniature sandalwood tree with delicately carved leaves, flowers, etc., and which attracted some attention was sent in along with a beautifully carved spectacle case and a finely carved *Ganesh* figure by Dewan Bahadur P. Rajaratna Mudaliar, C.I.E., of Madras. These all appeared to be of first class Mysore workmanship.

The Dewan of Pudukkotah exhibited a graceful ivory figure of *Saraswathy* seated on the edge of a cot and holding a veena. The design has probably been taken from one of the Ravi Varma pictures, this was much after the Travancore style of work, and was secured for the Baroda Museum. Mr. Viswambaram of Dowleswaram contributed two jewel boxes which were well made and handsome, but rather overloaded with ivory inlay. One of these contained an inner box very beautifully inlaid with ivory, and in distinctly uncommon style.

Ganesh Aiyer of Mysore sent some really artistic little ivory figures representing Ganapathi, Brahma with his four faces, and Venugopaul, the best was a particularly life-like figure of Kristna playing on a flute. He sent also some very handsome walking sticks with carved ivory and horn handles. These are perhaps better for ornament than for use. Hanumantappa of Mysore contributed a casket illustrating the Dasavaratna scene, and some photo frames specially made for H. H. the Maharajah of Mysore, these were all excellent, as was also an ivory box made by the same exhibitor with flat engraved figures of Rama, Sita, Lakshmana and Bharata.

The Rajah of Ettayapuram exhibited a well-carved ivory figure of Subramanya and his six faces, under an exquisitely designed *Gandava* Arch. This piece attracted considerable attention. Appavu Asari of Trichinopoly sent a fine figure of *Siva* seated on a bull and carrying *Parvati*, his sons *Ganesh* and *Subramanya* standing beside him.

Manchiram Hariram, Mancharam Govindram, and other Bombay makers, and Mr. Soorabji Jamasji of Surat, sent collections of the

well-known Bombay work known as Sandeli or Bombay inlay. This is not a true inlay at all, for it is a form of piqué or tarsia work.

This work is not only decorative, but interesting on account of its having been found possible to trace its introduction from Persia into India, from Shiraz into Sind, and thence its spreading to Bombay, Surat and Ahmedabad. The inlay is made up of tin wire, sandalwood, ebony, sappan wood, ivory, white and stained green, stag and buffalo horn. Strips of these materials are bound and glued together in rods, usually three-sided, sometimes round, and frequently obliquely four-sided or rhombic. They again are so arranged in compound rods as, when cut across, to present a definite pattern, and in the mass have the appearance of rods of varying diameter and shape, or of very thin boards, the latter being intended for borderings. The recent introduction of a soft, brassy looking yellow metal, to simulate gold, is not an improvement, none of the exhibitors at the Exhibition appear to have taken to the use of this. The best patterns as finally prepared for use are *chakar-gul*, or 'round bloom,' *katki-gul*, 'hexagonal bloom,' *tinkoniá-gul*, 'three cornered bloom,' *adhi-dhar-gul*, 'rhombus bloom, *chourus-gul*, 'square (matting-like) bloom,' *tiki*, a small round pattern, and *gandirio*, 'plump,' compounded of all the materials used; also *ekdáná*, 'one grain,' having the appearance of a row of silver beads set in ebony; and *pori lihur*, *jafrán marapech*, *jeri*, *baelmutana*, *sankruhansio*, and *prohansio*, these last being border patterns. Occasionally panels of richly carved sandalwood or of blackwood or of ebony, are framed in *Sandeli* work, at other times the surfaces of cabinets or other articles are entirely covered with Sandeli. Many of the articles exhibited were above the average in point of merit, both in design and finish.

The Trichinopoly Exhibition Committee sent in a large assortment of paintings on ivory and mica. Some of these were really good, especially the mythological subjects, and copies of portraits, groups and buildings taken from old Indian pictures. The models in pith work of the large and small Srirangam temples, and the Trichinopoly Rock and Fort, were excellent. Carved and mounted cocoanut-shells for many purposes were much in evidence. The Cannanore Jail sent a large collection of these goods in great variety. Other well-worked specimens were contributed by C. N. Rarichan Muppan of Calicut and several others. There were no carved or lacquered cocoanut-shell bracelets exhibited, nor were there any examples of carving upon the hard shell of the Bael fruit, Valanka. (Ægle Marmelos).

The second Prince of Karvetnagar sent a small and interesting collection of carved goods in ivory and in stone. The Secretary,

Industrial Exhibition Committee, Nuzvid, contributed some very interesting and well-made ornamented ivory articles for many uses.

Chotilal Mohanlal of Madras, and one or two other exhibitors contributed some inlaid marble, and a number of pieces of carved and pierced alabaster-work, these exhibits should all have been labelled "Made in Agra." None of the specimens merit any special remark.

Of figure subjects in stone the exhibits were most varied, the best perhaps being some of those sent by Surajmal Maliram of Jaipore. Exhibits also came from S. Arunachellam and Sons of Salem, Mr. T. V. Venkatrama Aiyer of Nellore, Jain Vaidya & Co. of Jaipore, Mr. P. Narasinga Row of Narasarowpet, P. L. M. Shunmugam Chettiar of Murayur, L. N. Shamsundarlal of Jaipore, and others. These exhibits comprised figures of many of the gods known to Hindu mythology and Gautamas, figures of animals, etc.

The Jaipore carvings were made in the soft Rajaputana, Central Indian and Rohilkhand marbles, and comprised a large assortment of Jain and Buddhist figures, as well as a fairly representative collection of those peculiar to Hindu mythology. The polished black figures from Rajputana are mostly made from a dark grey pot stone. These, when completed, are soaked for a time in hot oil, and are then scratch brushed and polished. This oiling and polishing gives them, for a considerable time, all the appearance of black marble, as which the dealers always describe them.

Stone figures sent by the Trichinopoly Committee, Mr. P. Narasinga Row of Narasarowpet, the Secretary, Industrial Exhibition Committee, Tinnevelly, and T. V. Seshagiri Row of Trichinopoly, were all very good. The engraved inlaid and polished stone-ware sent by H. Mahomed Esak Ahmedin of Shahpura, Punjab, and made from various veined and coloured local stone, were very creditable, and were in considerable demand.

Venugopal Naidu, Sculptor of Kosapolem, Arni, sent an interesting, but rather useless exhibition of his skill, in a piece of chain cut from a single stone. The *Brindaban* sent by this exhibitor was well-made.

Some models of the Taj Mahal in Agra, in the well-known Agra work, and sent by exhibitors from Jaipore had nothing special about them. It is strange that none of the Agra Lapidaries sent any exhibits here. The best of their inlaying, carving and modelling is little known in Southern India, and should have commanded a very good sale in the Exhibition.

PAINTINGS, DRAWINGS, PHOTOGRAPHY, CRAYON WORK STATUARY, ETC.—It was unfortunate that the only room available in "Cathedral House" for pictures, was full of cross lights, and was therefore altogether unsuited for use as a picture gallery.

As might have been expected, the Raja Ravi Varma of Travancore, contributed some really good work. His figure picture of "A Lady in the Moonlight," was very good, and so was the "Sketch of a Head" contributed by him.

Mr. G. J. P. Ganjuli of Calcutta sent several pictures, the best of these being his "Bathing Ghat Scene on the Hughli," which was well-drawn and in soft mellow colouring.

Mr. C. Damodara Nambiar of Tellicherry, contributed a conscientiously painted oil picture of a "Malabar Temple," which, badly hung as it was, attracted considerable attention. His painting of a "Pandaram Seated on a Tiger Skin" was in very good colouring, but there appeared to be something altogether wrong with the drawing of the head and shoulders.

Mr. M. V. Durandhar of Bombay, contributed four of his pictures, comprising "Portrait of Swami Maharaj," "Portrait Study of a Lady", "Sivaji's Training in Horsemanship," and "Mahrattas Victorious." All these pictures were much admired by many of the Indian visitors to the Exhibition, but to a European observer they were all a little out of perspective, and some of the colours seemed slightly over vivid and out of balance, so that the general effect was not particularly pleasing. S. C. Agaspar of the Bombay School of Art, sent in an oil painting of a "Potter at the Wheel." This picture was excellent in technique and colour, but there was something wrong with the perspective, and the shoulder of the potter. We understand Mr. Agaspar is quite a junior student, and we shall hope to see more of his work, when further training, and greater experience have softened down the minor defects we have referred to. Mr. Agaspar's work has character and originality in it.

Mr. R. J. Bhudwarakar of Baroda, contributed four interesting pictures, one of which was rightly commended by the jury. One of his pictures "Sidelong Looks of Love," was an attempt after the modern, and very risque French manner, a style of work that we would strongly recommend the painter to avoid. Mr. Bhudwarakar's other pictures "Playing on the Guitar," "View of Baroda City from the Park," and "Temple View," were a little weak in perspective and rather too strong in colouring, otherwise they were good.

Mr. Ramachendra Narayana of Chimpdulia, exhibited the picture

of a lady "In Maiden Meditation Fancy Free." It certainly bears promise of better things from the artist in the near future.

Mr. P. S. Joshi of Bombay sent half a dozen pictures, the best of which we think were "Damayanti Speaking to the Swan" and "Portrait of a Malayalee Lady."

The Rev. Mr. Margoschi's pictures, "Children's Joy" and "View of Back Bay from Bombay," evince knowledge of technique, and a good sense of colour values. His painting "Bombay Mint," is more pretentious, but we did not think it so good as the other two pictures; Two little oils, "Woman Selling Custard Apples" and a "Punkah-puller" were excellent in tone, but the drawing of the arms and the muscles appeared weak and unnatural.

PHOTOGRAPHS.—Messrs. Del Tufo & Co., Venkiah Brothers, Mr. K. Adikesava Pillai, all of Madras, and Mr. U. Roy of Calcutta, all contributed good collections of high class photographs and direct photo process pictures, in considerable variety of subject, process, and tone. C. N. Rajamannar Chetty of Madras, sent in two excellent photographs, "November Evening" and "Study of a Head." The light on the latter picture might, we think, have been made much better use of.

Mr. Ramachendra Rau of Mylapore, Madras, and Chitturi China Subbannah of Nandyal (Kurnool), sent some good specimens of *gesso* painted and varnished work in plates, boxes, fans, panels and table tops. The methods employed in this industry are similar to those described in connection with Bikaneer painted ware. The colouring of some pieces was excellent, but a few were very harsh and glaring in effect.

The Sacred Statuary exhibited by St. Joseph's Asylum and St. Antony's Institute, Mangalore, was fairly good of its kind, although much of the colouring was, perhaps, a little on the bright side.

Of photo process work, engravings and zincography, there was little exhibited meriting special notice. Good work in all these directions is undoubtedly done in Madras, both by Government and private firms, but there was nothing in the Exhibition to illustrate these industries.

One Seetaram Babu Joshi of Bangalore, sent a collection of pictures embossed with the finger nail. These were in fair drawing, but, to the writer, the art seems an *entirely useless* one.

Group XIV. Miscellaneous:—There were no rare books or old manuscripts, exhibited.

Messrs. Simpson & Co., of Mount Road, Madras, had a fine exhibit of six carriages. These comprised two State-coaches, a double-seated Brougham, a Victoria, a Ralli Cart and a hooded Stanhope Gig. As might have been expected, each carriage was perfect, and everything about them proved conclusively that this firm has nothing to learn in coach-building. We understand the firm imports very few of its requirements beyond the material for working up. The fine and artistically coloured silk coach trimmings, which were on show along with the carriages, were made upon "trimming looms" in the firm's works; the springs and most of the steel work used in their coach-building being also made on the premises. The large State Dress-Landau in this exhibit secured the gold medal for carriages.

Messrs. Ally Bros. of Mount Road, Madras, also sent a number of their excellent carriages in quite up-to-date styles, and all really well-built, painted and upholstered, showing that this comparatively new firm is really well to the front in coach-building and has little to learn from any one. They were very rightly awarded the silver medal.

Messrs. Lalji Ranchodjee and Sons of Bombay, sent two well-made carriages, one of these was a Landau, the top of this carriage was easily lowered by a child, with the aid of invisible springs which were, we understand, invented by this firm. This exhibit also secured a silver medal.

Handsomely decorated cuscus fans were sent from Bangalore City by Mr. M. K. Tirunarayana Aiyengar. Some dolls, toys in plain wood, and in lacquer ware, and some rattan baskets were also sent from Mysore. The basket work sent by Mr. Kota Jemmiah and Thavader, both of Parlakimidi, was very good in form, colour and make, and secured two bronze medals. Toys in great variety were sent by Mr. Kristniah of Chennapatnam, Mr. Rama Pannikar of Trichur, and Mr. Kesholal Lallubhai Misri of Baroda, and several others. There was nothing in all these exhibits to merit much comment here, except that most of the articles were particularly well finished, much better than such toys usually are.

CANE, REED AND BASKET WORK.—The rattan work exhibit was disappointing. For nothing of even average merit was shown. That there is a large demand for good reed, rattan, and bamboo furniture, is proved by the fact that every steamer from the Straits brings in large quantities of these goods, in quality far above any cane work that is made anywhere in India. The making of rattan goods is with the Jails, and in the hands of a few of the lower castes, no private

individuals with capital appears to have ever taken up the industry. Willows and suitable reeds undoubtedly exist in a number of places in the Presidency, and there appears to be no reason why rattan, reed, and willow-work furniture, baskets, ornaments, and articles for many domestic uses, should not be made in India for home use, and also largely for export. In Europe, the trade in these goods has developed considerably of late, and the quality and variety of them has improved much. All that appears necessary to create a living industry in these goods in the Madras Presidency is the securing of teachers to start the work, who have learned the industry in Europe, the Straits Settlements, China, or Japan. The only exhibits worth mentioning were from Mr. K. Chidambaranatha Mudaliar of Tanjore, Kota Jammiah and Thavudu of Parlakimidi, and they, although the best specimens in the Exhibition, had little of interest in them.

Mr. D. A. McCready, Superintendent of Prisons, Madras, contributed a very perfect and beautifully made model of a tent which was much admired.

The Minister of the Rampur State, Messrs. Usaf Ali & Sons, Ganesh Aiyer and Ramasamy Aiyer of Mysore, Subbana Chari of Pudukottah, Mahomed Isac Ahmudin of Shahpura (Punjab), the Secretaries, Industrial Exhibition Committees, Ambasamudram and Tirupati, the Superintendent of Jail, Cannanore, J. B. Vania of Sialkot, and others, sent walking sticks with silver, ivory, inlay, horn, and wooden heads, and in considerable variety of form and decoration, but none of these call for any special mention. The sticks exhibited by Mr. Subbanasari of Pudukkota, Messrs. Usaf Ali & Sons, Mr. Ganesh Aiyar and Mr. Ramaswamy Aiyer of Mysore, secured silver and bronze medals, and were certainly the best.

TAXIDERMY.—The Dewan of Cochin, Kesholal Lallubhai of Baroda and some others, sent stuffed and mounted animals' heads, skins, etc. The heads were all more or less stiff and unnatural looking, but the skins were very soft, pliant and well-cured. There was nothing shown under this class of any special interest.

A small rug made from waste silk, was sent by Miss Bayya Limjee of Palamkote (Bombay). This was well-made and designed, and in soft, rich colouring. Silk waste has been frequently used in Northern India for the making of carpets, it is applicable to many forms of decorative weaving and embroidery, and it has been applied to several other economic uses. This exhibit should have been shown in Group VI.

The Principal of the Kala Bhavan, Baroda, sent an exceedingly comfortable invalids' easy chair, with attachment enabling it to be

adjusted to any position, and apparently copied from a high class English-made chair. This exhibit should have appeared in Group XII.

Mr. J. B. Vania of Sialkot (Punjab), the Imperial Sports Works of Sialkot, and one or two others, sent good Badminton, Tennis, Hockey and Cricket bats and balls, Croquet sets, etc. These were all well-made and finished, and much resembled good quality English-made articles in their general appearance.

UMBRELLAS.—In India, Burmah, Malaysia and China, leaf, bark, and palm forms of this useful article have been in use from time immemorial. Frequent references are made to sun shades and umbrellas in the epics and other of the earlier Indian writings ; and we learn that very beautiful sun and rain shades in many forms were carried in processions of the Gods, and of Sovereigns and Princes. The "Chattri" has ever been one of the insignia of Indian royalty and of high estate.

The *skideion* or day shade of the Greeks, was carried over the head of the effigy of Bacchus. and we know that the daughters of aliens were required to shade from the sun with parasols, the heads of the maidens of Athens. In Rome when thc veil could not be spread over the ampitheatre it was the custom of women and effeminate men to defend themselves from sun and rain with the *umbraculum*, this covering seems to have been of skin or tanned leather, and to have been capable of being opened and closed, some, what in the manner of our present day umbrellas.

From Beaumount and Fletcher's Play "Rule a Wife and have a Wife," we know that umbrellas were great luxuries in England in 1640.

> "Are you at ease? Now is your head at rest?
> Now you have got a shadow, an umbrella,
> To keep the scorching world's opinion,
> From your fair credit."

John Evelyn had evidently seen very few umbrellas up to 1664, for he tells us that he was shown umbrellas by a Jesuit, who had received them by East-India ships from Missionaries in China and Japan. And we know from "*The Statistical Account of Glasgow,*" by Dr. Cleland, that they were first seen there so late as 1781.

The Canopy used in royal progresses and religious processions, was in vogue in Europe as early as the fourth century, probably earlier.

Umbrellas formed a small exhibit. It is strange that no Indian firms have ever taken up this industry seriously. At present, these goods are either imported whole from England or the Continent, or the parts are sent out and assembled in India. In many cases the sticks also are brought from abroad. There appears no reason at all why

machinery cannot be brought out, and the whole umbrella made in India. The weaving, dyeing, water-proofing and glazing present no real difficulties. Sticks in great variety can be grown and sanded or steamed to shape, thus leaving nothing but the sheet metal for the stamped frames, etc.. to be sent out from Europe. India should be able to supply a very large proportion of the umbrella, whip, and walking sticks of the world. The Straits Settlements, Japan, South America, Austro-Hungary and Germany, appear now to hold the best of the stick trade.

The Indian Cycle and General Engineering Co., Mount Road, Madras, were the only exhibitors of Bicycles: the two they sent were up-to-date machines of excellent quality and moderately priced.

There were a number of exhibits of peacock feather fans, screens, etc., from several exhibitors. These were all well-made, and in the usual forms. Some decorated dried gourds were sent in by one or two exhibitors. There were also several musical instruments in this class which should have been included in Group IV, but there was nothing about them to call for remark.

Several neat models, notably one of a bullock coach from the Tinnevelly Technical Institute, were well-made and in good proportion. Mr. Sundaram Aiyer of Madras, sent in some good model furniture.

The Dewan of Cochin sent an interesting collection of appliances for fish catching, including a model of a Chinese net. There were a number of toys, models of furniture, screens, etc., made from paddy, corn, seeds, shells and beads.

Some interesting puzzles and puzzle boxes were shewn by Mr. Shunmugam Chettiar of Murayur, Venkatrao Harichund of Bombay, and others.

Chittara Subbana of Banganapalli shewed a specimen of his work in an engraved grain of paddy bearing a Telugu Verse; this was in a quaintly decorated little casket.

Mr. P. C. L. Shunmugam Chetty of Madura contributed very well-carved horn models of chameleons, crabs, scorpions, frogs and flies; they were distinctly good.

The Superintendent, Madras Lunatic Asylum, sent in two large painted wooden figures of a man and a woman, made and coloured by a lunatic who has had no training, these were certainly uncommon.

The Secretary, I. E. C., Kondapalli, shewed group specimens of the well-known Kondapalli figure models, bungalows, wells, gardens, etc., all quite up to the average.

It is possible that some valuable and interesting exhibits have been accidentally overlooked, if this be so, we would claim the indulgence of the exhibitors, and ask them to make some allowances for the vast mass of notes and reports that have had to be worked through, and for the time that has elapsed since the Exhibition closed.

This concludes our all too brief general survey of the Industries and Arts which found representation at the late Exhibition. One cannot but feel pessimistic regarding the trades which have been so slowly but surely decaying. And it is therefore interesting to know that there are signs of an awakening, and that some men of light and leading in the Presidency are taking an interest in the indigenous manufactures of the country. The Madras Victoria Jubilee Technical Institute came into existence seven years ago and it should, by this time, have been able to do much to create a renewed interest in decaying industries, and to try and resuscitate the few which this all too brief survey has shown to be in an altogether moribund condition. It is alleged that no time has been wasted ; that schemes for exploiting Madras industries and manufactures have been carefully thought out and perfected, and that as soon as the new Victoria Hall (for which a site has been secured and tenders invited) is completed, much will be done in the way of advertising and pushing local manufactures. We would enquire whether it is necessary to wait so long? can nothing be done now by the Committee of the Technical Institute or by Indian gentlemen of means and leisure who take sufficient interest in the Industrial progress of the country to be willing to embark capital in the exploitation of its Industries? It would be necessary to put energy and close attention into the work, and the first attempts should be in the direction of adapting these industries to up-to-date needs both for India and for export abroad. A Syndicate might be formed for the purpose of developing such Industrial and Art Manufactures of the Presidency as are not now dealt with by the mercantile community as trade and exportable goods ; such a Syndicate would be supporting and assisting the work of the Victoria Institute, and would probably be able to put its management into touch with economically valuable forms of industry and art which are now little known outside the districts in which they are produced.

The lack of interest, and ignorance of the arts and industries of the country displayed by the majority of the higher classes is phenomenal, and is in large measure due to the fact that no teaching about the iudustries and acts of the country is given in the schools and colleges. Technical and Industrial Education in India are usually kept apait from General Education, except perhaps in a very few special schools. Almost every decent school and college in the United Kingdom, America Germany and Japan has its well-ordered workshops with full time or visiting instructors ; but it is strange that no serious attempt appears to have been made in India to develope practically, by means of manual training, the faculty of observation, or to encourage quickness and aptness of hand, and the power to correctly estimate shape and bulk.

Recent proceedings of the Travancore Government shew that His Highness the Maharajah and his advisers have fully realized this want, and that they intend providing, as early as possible, a practical Industrial course in High and Middle Schools, for those whose tastes and inclinations lie in the direction of the industries of the country, and for those others who rightly feel the wants of such training as an important aid to a liberal education.

The following interesting extracts from recent proceedings of the Travancore Government on the subject speak for themselves :—

" It is observed that, while the primary stage more or less completely meets the needs of those who merely require the rudiments of education, the pre-Collegiate stage, including Middle and High Schools, being designed for those who wish to enter the University and being thus of an almost exclusively literary character, affords no facilities and is in fact unsuited to the increasing number who wish to take up pursuits—commercial, industrial or practical—which are more closely connected with the ordinary concerns of life. It is also observed that, under the present system, the memory is cultivated at the expense of the understanding, that very little is done to stimulate and strengthen powers of observation and that neither dexterity of hand nor appreciation of magnitude and form receives that attention which it deserves whether regarded as an educational method or an educational aim. Further, the Government of His Highness see signs on all sides of an awakening to the necessity for improvement in the existing educational methods particularly in their application to practical end, and feel that it is their duty to make provision for meeting the needs of the people in this direction.

The absence of facilities for training in the first, and the new employment of an admittedly powerful educational method in the second of these cases, are defects which Government are desirous of seeing remedied ; first, by the introduction into a certain number of schools of these methods of manual training which have met with success in America, Europe and Japan ; second,

by the establishment of schools in the curricula of which these methods, with suitable adaptation to local conditions, will form an important feature, along with branches of instruction designed to meet the deficiencies already indicated.

The system which it is thus intended to introduce will have its due effect in the cultivation of these aptitudes and faculties which, at present, receive no attention and, if it were carried no further, would have a high value as an educational method. But Government have also in view its utility as the basis for a further scheme of technical instruction which it is intended to introduce later. The graduates selected for deputation will have "to undergo courses of instruction in the methods of manual training and in the organisation and management of schools which employ such methods. They may also have to visit the chief manual training and technical schools in America, Europe and Japan. On their return, they will be employed in organising schools on the lines already indicated and in training teachers for such schools."

This is as it should be; it is to be hoped that the Government of India, in its further consideration of the whole question of Technico-Industrial Education, will devote some attention to this aspect of it, and eventually arrange that such training shall be given side by side with the ordinary curriculum in every Secondary and High School in the country.

The steady labours for years past of Sir George Watt and his assistants, in exploring the economic industries of the country have gone a long way toward developing them by attracting to them the attention of consumers both in and out of India. Dr. Edgar Thurston of the Madras Museum has thoroughly and ably seconded Sir George Watt's efforts, so far as the industries of Southern India are concerned. And the tours made by Sir George Watt and Mr. Percy Brown on behalf of the Delhi Art Exhibition, have done a great deal to throw more light on the Industries and Arts of the country.

But more is needed. A full and comprehensive survey of the whole of the Indian Manufactures, from an economic, industrial, and artistic point of view ought to be made by trained officials in each Province. It would be necessary to detail for this work men with a thorough knowledge of the Vernacular, who are in sympathy with the people, and who will not depend for their information upon any but those who are themselves personally concerned in the working of the various industries, both as masters and as artizans.

APPENDIX A.

Judges.

President :

E. Thurston, Esq.

Mrs. Atkinson.

C. F. Badcock, Esq.

C. Benson, Esq.

Mrs. Brander.

A. Chatterton, Esq.

H. T. Harris, Esq.

W. Keess, Esq.

C. Krishnan, Esq.

Lt.-Col. J. Maitland, I.M.S.

Dr. T. M. Nair.

Dewan Bahadur P. Rajaratnam Moodelliar, C.I.E.

M.R.Ry. Raja Ravi Varma Avl.

M.R.Ry. Raja Raja Varma Avl.

Rajah Sir S. Ramasami Moodelliar, *Kt.*, C.I.E.

C. B. Simpson, Esq.

C. Sowden, Esq.

M.R.Ry. C. K. Subba Rao Avl.

M.R.Ry. P. Theagaroya Chettiar Avl.

M.R.Ry. C. Thirumalaiyya Naidu Garoo.

M.R.Ry. Velayudachari Avl.

Lt.-Col. J. L. VanGeyzel, I.M.S.

M.R.Ry. W. S. Venkataramanujulu Naidu Garoo.

M.R.Ry. M. Venkateswara Row Pantulu Garoo.

F. J. Wilson, Esq.

Secretary to the Judges :

M.R.Ry. K. Mangesh Rao Avl.

APPENDIX B.

LIST OF DONORS OF MEDALS AND PRIZES.

Number.	Name of Donor.	Amount.	Remarks.
1	H. H. The Maharajah of Jeypore ...	250	
2	H. H. The Maharajah of Bobbili ...	250	
3	H. H. The Maharajah of Travancore ...	200	
4	H. H. Rajah Rangaiah Appa Row Bahadur ...	200	
5	Rajah Sir Savalai Ramasami Moodelliar...	150	
6	H. H. The Maharajah of Cooch-Behar ...	100	
7	H. H. The Rajah of Dharakotta ...	100	
8	H. H. The Rajah of Kurupum ...	100	
9	H. H. The Rajah of Ettayapuram ...	100	
10	Maharani Lady Gajapati Row ...	100	
11	Rajah Mana Vikraman of Nilambur ...	100	
12	The Zemindar of Kangundi ...	100	
13	The Zemindar of Udayarpalayam ...	100	
14	The Zemindar of Bodinayakanur ...	100	
15	Rao Bahadur Krishnadoss Balamukundoss.	80	
16	H. H. The Rajah of Gadwal ...	60	
17	H. H. The Rajah of Amarchinta ...	60	
18	The Zemindar of Peddakimidi ...	50	
19	The Rajah of Devarkota, Krishna Dt. ...	50	
20	Hon. K. Vasudeva Iyengar, Trichinopoly.	50	
21	M. Venkatasami Naidu, Esq., Madras. ...	50	
22	K. Chidambaranatha Moodelliar, Esq., Shiyali ...	50	
23	The Raja of Kollengode ...	50	
24	The Zemindar of Oottukuli ...	50	
25	T. S. Sivaswami Odayar, Esq. of Kumbakonam ...	30	
26	S. Srinivasa Row, Esq. of Bellary ...	25	
27	The Zemindar of Vadekarai, Periakulam...	20	
28	The Zemindar of Sevalpatti ...	10	
29	J. P. Kotelingam, Esq. of Bellary ...	10	
30	K. Sreeneevasa Row, Esq. of Kurnool ...	10	
31	Dr. T. M. Nair, Madras ...	10	
32	K. Venkatachella Moodelliar, Esq. ...	10	
33	Dr. Varadappa Naidu, Madras ...	10	
34	Rao Bahadur Dhone Subba Row of Kurnool ...	10	
35	Messrs. Heerjee & Sons, Cannanore ...	10	
36	Annamalai Moodelliar, Esq. ...	10	
37	C. V. Venkataramana Iyengar, Esq. of Coimbatore ...	10	
38	S. Sambasiva Aiyar, Esq., Bangalore ...	10	
39	Mangat Gopala Menon, Esq. of Tellicherry.	10	
40	G. Narainswami Chetty, Esq., Madras ...	10	
41	Viswakarma Kulabhimana Sabha, Madras.	10	
	Rs....	2,715	

Amount credited to Medals a/c ... 2,651 14 3
General contribution a/c ... 63 1 9
Rs... 2,715 0 0

APPENDIX C.

PRIZE LIST.

GROUP I.—MACHINERY.

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
1	Gold medal	Water Lift ...	Messrs. Massey & Co., Madras	The Rajah of Devakota's Medal.
2	Do	Plantain fibre machine ...	M. A. G. Ganapathi Aiyar, Water Works, Tanjore	H.H. The Travancore Maharaja's Medal.
3	Do	do ...	Mr. Proudlock, Government Bot. Gardens and Parks, The Nilgiris	Do.
1	Silver medal	The Ampthill Patent Loom ...	Mr. A. A. Kuppusami Aiyar, Madura	

GROUP II.—MECHANICAL CONTRIVANCES, Etc.

1	Silver medal	Oil Mill ...	Messrs. D. Raju & Co., San Thome, Madras	
2	Do	Acetylene Gas lamp.	The Shri Shivaji Metal Works, Sholapur	
3	Do	Boiler (bath) ...	Do	
1	Bronze medal	Watch making implements ...	The Kala Bhavan, Baroda	

GROUP III.—ELECTRICITY—*No Awards.*

GROUP IV.—INSTRUMENTS.

1	Gold medal	Surgical instruments, made in India.	M essrs. N. Powell & Co., Bombay	Medal by I. E. C. and Dr. T. M. Nair.
1	Silver medal	Clocks, made in India.	The Kala Bhavan, Baroda	
2	Do	Sruti Mandal Flute.	Messrs. Mandal & Co., Calcutta	Mr. S. Srinivasa Row's Medal.
1	Bronze medal	Harmonium in four octaves, couple system, with two separate reeds for sruti.	Mr. Muthusami Achari of Kumbakonam	Mr. S. Srinivasa Row's Medal.
1	Highly commended	Metronome adapted for three talas of Hindu Music.	Mr. Krishnaswami Sastrigal of Pudukotta.	

GROUP IV—(*continued*).

Number.	Nature of award.	Article or articles for which the award is made.	Name of Exhibitor.	REMARKS.
1	Commended	Metronome adapted for Hindu Music.	Mr. Sabapathy Mudaliar of Pudukotta.	
2	Do	Veena with double sets of pegs.	Mr. Saripalla Sambasiva Row of Rajahmundry.	

GROUP V.—MATERIALS USED IN CONSTRUCTION, AND MINERAL PRODUCTS.

1	Gold medal	A large and varied collection of timbers.	The Mysore Forest Department.	**Rajah Sir Savalai R. Moodelliar's Medal.**
2	Do	A large and varied collection of ores, minerals and stones.	The Mysore Geological Department.	**Do.**
3	Do	Fine Tiles, terracotta goods, building materials, etc.	Henke's Tile Works, Feroke, Malabar.	**Do.**
1	Silver medal	Fine Tiles, terracotta goods, building materials, etc.	The Basel Mission Tile Works, Canara and Malabar.	
2	Do	A large Collection of various timbers.	The Cochin Forest Dept.	
3	Do	do	The Malabar Saw Mills, Kallai.	
4	Do	A large collection of ores and minerals, chiefly mica.	Mr. Khudus Badsha Sahib of Messrs. H. Md. Badsha Sahib & Co., Madras.	**Mr. S. Sambasiva Aiyar's Medal.**
5	Do	Fire bricks.	Messrs. Burn & Co., Jubbulpore.	
1	Bronze medal	A varied collection of timbers.	The Pudukotta State.	
2	Do	do	Mr. V. A. Coelho, Timber contractor, Karwar.	

GROUP VI.—TEXTILES.

(Lace, Embroideries, Brocades, Needle-work, &c.).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
1	Gold medal.	A collection of gold brocades and kinkhabs of extra good quality.	Messrs. Katyaini and Co., Benares	Rajah Rangiah Appa Row Bahadur's Medal.
2	Do	A collection of gold, silver and silk embroideries of extra good quality.	Mr. Daday Khan, Mount Road, Madras.	Do
3	Do	do	The manufacturer or dealer, (through Mr. G. Krishnamachariar, High Court Vakil, Hyderabad).	Do
4	Do	A collection of gold and silver embroidered cloths extra good quality.	Messrs. Chathurbhooja Dass Koosal Dass & Sons, Madras.	Maharani Lady Gajapati Row's Medal.
5	Do	do	Messrs. Paramananda Doss and Chota Doss, Madras.	
6	Do	A good collection of gold and silver lace cloths of their own manufacture.	Messrs. Krishna Ram & Co., Madura.	The Zemindar of Udayarapalayam's Medal.
7	Do	do	Messrs. Takoor Doss and Sons, Madras.	Rajah Rangiah Appa Row Bahadur's Medal.
1	Silver medal	Gold and silver embroideries.	Messrs. V. Manikya Bather and Co, Evening Bazaar, Madras.	
2	Do	do	Mr. Akalank Chandra Mukerjee, Mayanapur, P. O. Bankura, Bengal.	
3	Do	Silver embroideries...	Mr. Girdhardas Haridas, Benares.	
4	Do	A Collection of gold lace in various patterns.	The Manufacturer, thro' Mr. G. Krishnamachariar, Hyderabad	

GROUP VI—(*continued.*)

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
5	Silver medal	A Collection of embroidered Dacca muslins.	Mr. J. N. Roy, Calcutta.	
6	Do	Embroidered Woollen Phulkaries.	The Central Jail, Bikanir	
7	Do	Old brocade of artistic merit.	The dealer, thro' Mr. G. Krishnamachariar, Hyderabad.	
8	Do	A collection of gold and silver embroidered work.	Messrs. Framjee P. Bhumgara, Madras.	
9	Do	Fine thread and silk lace and embroideries.	The Presentation Convent, Black Town, Madras.	
10	Do	do	Miss Gnanamani, All Saints' Industrial School, S.P.G. Trichinopoly.	
11	Do	do	Lace School, S.P.G. Mission Idaiyangud.	
12	Do	do	Mrs. Andrew, Superintendent, U. F. C. Mission Industrial Classes, Chingleput.	
13	Do	do	Miss Fletcher, The Industrial Settlement, Pulwal, Gurgaon Dt., Punjab.	
14	Do	Embroidery on muslins, cotton and net and chikan work.	Messrs. Kidar Nath and Ram Nath, Lucknow.	
1	Bronze medal	Fine thread and silk lace.	Miss Y. Gnanapoo, Rev. Margoschis' School, S.P.G. Nazareth.	
2	Do	do ...	Rev. A. D. Limbrick's School, S.P.G. Ramnad.	

GROUP VI—(*continued.*)

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
3	Bronze medal	Drawn thread work.	The Friend-in-need Society's Workshop, Mount Road, Madras.	
4	Do	Crochet work ...	The Presentation Convent, Black Town, Madras.	
5	Do	Collection of embroidery and drawn thread work.	The Basel Mission Weaving Estbt., Calicut.	
1	Very highly commended	Crochet work ...	Mrs. Beer's Godaveri Mission School, Narasapur.	
2	Do	Embroideries on muslin, cotton and net.	Mrs. Thomas' School, C.M.S. Megnanapuram.	
1	Highly commended	Gold embroidery ...	Mr. P. L. C. Shunmugam Chetty, Murayur, Madura.	
2	Do	Gold and silver embroidery.	Mr. T. Krishnajee Row, No. 27, Nagappier Street, Tiruvetteeswarenpet.	
3	Do	Embroidery on muslin, cotton and net.	Palasamudram Venkammal, Rajah Sir S. R. Mudr.'s Girls' School, Madras.	
4	Do	Fine thread and silk lace.	The Presentation Convent, Black Town, Madras.	
5	Do	do ...	St. Ann's Convent, Mangalore.	
6	Do	Knitting ...	St. Joseph's Asylum, Mangalore.	
7	Do	do ...	Soubhagyavati Prakasammal, Pudukotta.	
8	Do	do ...	Wesleyan M. Orphanage, Hassan, Mysore Section.	
9	Do	do ...	St. Antony's Female Institute, Mangalore.	

GROUP VI—(*continued*).

Number.	Nature of award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
1	Commended	Gold and silver embroidery.	Mr. B. Kursundas Gurdas Swami Narayan, Baroda.	
2	Do	do ...	Mrs. Harnabai Landjee, Secy., Ladies' Association, Yeotmal, Berars.	
3	Do	do ...	Mr. Mohamed Sheriff, Instructor, Technical School, Pudukotta.	
4	Do	Embroidery on leather.	The Central Museum, Nagpur.	
5	Do	Lace ...	The Convent, Mysore Section.	
6	Do	Drawn thread work.	Reformatory School, Chingleput.	

GROUP VI.—TEXTILE FABRICS.—(*General.*)

1	Gold medal.	A general collection of hand loom made cotton goods.	The Basel Mission Weaving Estbt., Calicut.	Maharani Lady Gajapati Row's Medal.
2	Do	A general collection of power loom made cotton goods.	The Manockjee Petit Manufng. Co., Bombay.	The Rajah of Kurupum Medal.
3	Do	A collection of silk fabrics.	Messrs. S. S. Bagchi & Co., Murshidabad.	Do
4	Do	Fine woollen pile carpet.	Mr. J. W. Coombes, Madras.	The Maharajah of Jaipur's Medal.
5	Do	A collection of fine silk cloths.	The Manufacturer, or Dealer, thro' Mr. G. Krishnamachariar, Hyderabad.	
6	Do	A representative collection of commercial produce.	Messrs. Binny & Co., Madras	Mr. M. Venkatasami Naidu's Medal.
1	Silver medal.	A collection of cotton yarns and sewing threads.	The Manockjee Petit Manufacturing Company, Bombay.	

GROUP VI—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
2	Silver medal	A collection of hosiery made by power knitters.	The Manockjee Petit Manufacturing Company, Bombay.	Mr. Venkataramana Aiyangar's Medal.
3	Do	Cotton goods ...	Reformatory School, Chingleput.	
4	Do	Hand printing on cotton ...	Mr. Vadlamudi Veeraraghavulu Naidu, Masulipatam.	Bobbili Maharajah's Medal.
5	Do	do	The Kala Bhavan, Baroda.	
6	Do	Lace cloths ...	Mr. Merava Papaiah Gari Venkataiah, Madhavaram, Sidhout Taluk.	Mr. Dhone Subba Row's Medal.
7	Do	Burhanpur muslins...	The Central Museum, Nagpur.	
8	Do	Silk lace cloths ...	Mr. Adoni Suraichandappa, Adoni.	Mr. J P. Kotilingam's Medal
9	Do	Woollen pile carpets.	The Central Jail, Bangalore.	
10	Do	do	The Jail, Mysore ...	
11	Do	do	The Central Jail, Jaipur.	Mr. G. Narainsami Chettiar's Medal.
12	Do	do	The Central Jail, Vellore.	
13	Do	Cotton carpets ...	The Central Jail, Jaipur.	
14	Do	Aloe, and cocoanut fibre twilled matting.	Messrs. Cameron & Co., Quilon.	
15	Do	Checked cumblies...	The Manufacturer thro' the Hospet Exh. Committee, Bellary.	
16	Do	Collection of woollen goods.	The Cawnpore Woollen Mills Co., Ltd.	
17	Do	Collection of Berlin wools, and knitting yarns.	Do	

GROUP VI—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
18	Silver medal.	Wool shawls ...	The Egerton Woollen Mills Co., Dhariwal, Punjab.	
19	Do	Gold and Silver lace cloths.	Mr. V. S. N. Venkatarama Iyengar, Jadamooni Koil Street, Madura.	
20	Do	Collection of coloured-border women's cloths.	Mr. Rangasami Chetti, Salem.	
21	Do	Men and women's cloths.	Industrial School, Melkote.	
22	Do	Collection of striped muslins.	Mr. Ganapavarapa Venkannah, Chicacole.	Bobbili Maharajah's Medal.
23	Do	Collection of women's silk cloths.	Mr. Nallasa, Conjeevaram.	
24	Do	Collection of white silks and handkerchiefs.	Mr. Munisamisa, Conjeevaram.	
25	Do	Collection of plain and shot silks.	Jatni Navanna Nagasamy, Silk Merchant, 3/1800, South Masi Street, Madura.	
26	Do	Collection of cotton textiles.	The Century Mill, Bombay.	
27	Do	Arni muslins ...	Mr. M. Kumara Chetty, Arni.	
28	Do	Collection of Arni cloths.	Do	
29	Do	Collection of silk cloths.	Mr. M. Sheshadri Chetty, Kollegal.	Gudwal Rajah's Medal.
30	Do	Collection of silk fabrics.	The Sassoon and Alliance Silk Mills, Bombay.	
31	Do	Collection of cotton tweeds.	Mr. M. G. Narsima Chetty, Karoor.	

GROUP VI—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
32	Silver medal.	Collection of men's cloths.	Mr. T. A. M. Balasundaram Chettiar, Kumbakonam.	
33	Do	Collection of gold lace cloths.	Mr. Oosman Khan, Mysore.	
34	Do	Collection of silk yarns.	The Tata Silk Farm, Bangalore.	
35	Do	Collection of textiles.	Messrs. Perumal Chetty & Co., of Thiruvappoor, Puducotta.	
36	Do	Collection of silk fabrics.	The Chhoi Silk Mill, Bombay.	
37	Do	Collection of cotton textiles.	Mr. Shaik Salia Sahib, Bapatla.	Bobbili Maharajah's Medal.
38	Do	Collection of wool shawls.	The Punjab Trading Co., Calcutta.	
39	Do	Dacca muslins ...	The Indian Stores, Limited, Calcutta.	
40	Do	Collection of women's silk cloths.	Mr. D. S. Bhattacharya, Murshedabad.	
41	Do	Collection of silk and woollen cloths.	Messrs. Katyaini & Co., Benares.	
42	Do	Collection of palampores.	Mr. Arni Chengalroya Chetty, Kalahasti.	
43	Do	do ...	Mr. Rekapalli Gopalakristnama Naidu, Masulipatam.	D
44	Do	do ...	Mr. Dhonala Ghedda Guruvappa Naidu, Kalahasti.	
45	Do	Collection of silk fabrics.	Mr. Nimmanna Krishnama, Berhampore, Ganjam.	Do

GROUP VI—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
46	Silver medal	Assam silk ...	Mr. R. K. Saraswati, Gauhati.	
47	Do	Tassa silk ...	The Central Museum, Nagpur.	
48	Do	A collection of textile fabrics.	M.R.Ry. Venkateswara Row Pantulu, Nuzvid.	Bobbili Maharajah's Medal.
49	Do	Collection of grass mats.	Mr. Samaiudeen Lubbay.	
50	Do	do ...	The Central Jail, Vellore.	Jeypore Maharajah's Medal.
51	Do	do ...	Mr. Kota Jammiah, Parla-Kimedi.	Bobbili Maharajah's Medal.
52	Do	do ...	Mr. Kota Thavidu, Parla-Kimedi.	Do.
53	Do	Plantain fibre cloth.	The School of Arts, Trevandrum.	H. H. Travancore Maharajah's Medal.
54	Do	Plantain thread ...	Sri Mula Rama Varma Tech. Institute, Nagercoil.	Mr. Annamalai Mudaliar's Medal.
55	Do	Plantain fibre cloth.	Do	H. H. Travancore Maharajah's Medal.
56	Do	A collection of cotton fabrics.	The Central Jail, Coimbatore.	
57	Do	Ropes made from plantain fibre.	Rev. Andrew, U.F.C.M. Agricultural School, Melrosapurum, Chingleput.	
58	Do	Collection of coir ropes.	Wesleyan Mission Industrial School, Tumkur	
59	Do	Coir ropes ...	Mr. S. Kader, General Merchant, Native Cochin.	
60	Do	Collection of Fibres.	The Mysore Forest Dept.	H. H Travancore Maharajah's Medal.

GROUP VI—(*continued*).

Number.	Name of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
61	Silver medal	Collection of fibres.	The College of Agriculture, Saidapet.	H. H. Travancore Maharajah's Medal.
62	Do	do ...	The Conservator of Forests, Coimbatore.	
63	Do	do ...	Mr. B. L. Narayana, Cocanada.	Bobbili Maharajah's Medal.
64	Do	do	The College of Agriculture, Saidapet.	
65	Do	Fibres of good quality	Govt. Gardens, Ooty.	
66	Do	Collection of woven and embroidered silks.	Mr. Kuppu Ramasamy Chetty.	
1	Bronze medal	Collection of hosiery made on handlooms.	The Basel Mission Weaving Estbt., Calicut.	
2	Do	Collection of colored cotton goods.	The Central Jail, Salem.	
3	Do	Cotton carpets ..	The Central Jail, Vellore	
4	Do	do ...	The Central Jail, Jaipur, Rajapootana.	
5	Do	Handloom weaving.	Mr. A. A. Kuppusawmy Iyer, Madura.	
6	Do	Checked cumblies ...	Mr. Siddanna Goud, Yardakera, Kalyandoorg Taluq.	
7	Do	Madras handkerchiefs.	Jammalmudugu Chennabasappa, Cuddapah.	
8	Do	Collection of loonghees.	Mr. Gataram Pappiah Churala, Bapatla.	Bobbili Maharajah's Medal.
9	Do	Dyed women's cloths.	Mr. V. S. N. Venkatarama Iyengar, Madura.	

GROUP VI—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	REMARKS.
10	Bronze medal	Collection of printed cottons.	Mr. Patnala Sanyasi, Cocanada.	Bobbili Maharajah's Medal.
11	Do	Woollen pile carpets.	Mr. Manepally Subramaniem, Jalalpettah, Masulipatam.	Do.
12	Do	do ...	Mr. Mahomed Jafer Sahib of Tangellamoodi, Ellore.	Do.
13	Do	Cumblies ...	Mr. Narayana Chetty.	
14	Do	do ...	Mr. Gowda Kullappah.	
15	Do	Cotton checks ...	Industrial School, Melkote.	
16	Do	do ...	Mr. Devanguda Hanumantappa, Chittaldoorg.	
17	Do	Collection of muslins and cloths.	Mr. Vadega Jagganna, Vizagapatam.	Do.
18	Do	Collection of white lace cloths.	Nookala Subbaiah, No. 63, Apparajupet, Pullampet Taluk, Cuddapah District.	
19	Do	Collection of white lace cloths.	Kalava Sunjiva of Rameswaram, Prodatur, Cuddapah Dt.	
20	Do	Cotton carpets ...	The Manufacturer or dealer, (thro' I. E. C., Trichinopoly).	
21	Do	Finished white cloths.	Mr. Md. Hussain, Rampur State.	
22	Do	Collection of cotton tweeds.	Mr. T. Christian, The Malabar Weaving Co., Cannanore.	
23	Do	Collection of checked cloths.	The Spinning & Weaving Co., Sholapur.	

GROUP VI—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
24	Bronze medal	Collection of cotton checks.	Mr. Sesla Veerayya, Rajahmundry.	Bobbili Maharajah's Medal.
25	Do	Collection of women's cloths.	Messrs. P. S. Seetharama Chetty & T. P. Chinna Krishna Chetty.	
26	Do	Assam silks ...	The Assam Valley Trading Co., Tezpur, Assam	
27	Do	Collection of lace cloths.	Mr. N. A. Parthasarathi Chetty, Cloth Merchant, Bazaar Street, Dindigul.	
28	Do	Hemp cloths for gunny bags.	Ramagiri Chengayya of Nagari Village, Puttur, N. Arcot.	
29	Do	Coir-matting ...	Mr. Pallithoombil Sankaran, Kacheri Amsom, Calicut.	

GROUP VII.—VEGETABLE AND ANIMAL PRODUCTS.

1	Gold medal.	Butter and ghee ...	Messrs. Ranga Raju Bros., Mount Road, Madras.	Nilambur Rajah Manuvikraman's Medal.
2	Do	do ...	The College of Agriculture, Saidapet.	Do
3	Silver medal	Collection of rubber	Govt. Gardens, Ooty.	Kangundy Zemindar's Medal.
4	Do	Banana flour ...	M. G. Medical Hall, Tellicherry.	Messrs. Heerjee & Sons' Medal.
5	Do	Beer ...	Messrs. Rungiah Gowden & Co., Ootacamund.	
6	Do	Wheat flour ...	The Howrah Flour Mills, Ld., Calcutta.	The Udayarpalayam Rajah's Medal.
7	Do	Collection of oils ...	The College of Agriculture, Saidapet.	The Rajah of Ettiapuram's Prize.

GROUP VII—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	REMARKS.
8	Silver medal	Collection of oilseeds	The College of Agriculture, Saidapet.	The Rajah of Ettiyapuram's Prize.
9	Do	Tinned butter ...	The Champion Dairy Co., Ahmedabad.	Do
10	Do	do ...	The English Co-operative Dairy Co., Ahmedabad	Do.
11	Do	Tea ...	Messrs. Parry & Co., Madras.	Kangundi Zemindar's Prize.
12	Do	do ...	The Nilgiri Planters' Co., (thro' Mr. T. Brown, Glendale.)	Do.
13	Do	do ...	Mr. J. A. Richardson, Yellapatti Estate, Yellapatti P. O., S. India, Travancore State.	Do.
14	Do	do ...	Madoora Tea Co., Calcutta.	Do
15	Do	Coffee ...	Mr. M. Subrayulu Naidu, Dindigul.	Do
16	Do	do ...	United Coffee Growers' Co.	Do.
17	Do	do ...	Mr. Joachim Pais, Mangalore.	Do.
18	Do	Sugar ...	Deccan Sugar Co.	Do.
19	Do	do ..	The East India Distilleries & Sugar Factories.	Do.
20	Do	Cigarettes ...	Messrs. Pappadapoulus Brothers, Mount Road, Madras.	
21	Do	Cigars ..	Mr. N. A. Parthasarathi Chetty, Bazaar Street, Dindigul.	

GROUP VII—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
22	Silver medal	Cigars ...	Messrs. H. Jons & Co., Cocanada.	
23	Do	do	Lanka Cigar Factory.	
24	Do	do	D'Cruz & Co., Cocanada.	
25	Do	Grains and pulses ...	Mr. Kamakshi Rao c/o District Board, Madura.	The Rajah of Ettiapuram's Prize.
26	Do	do ...	The Pudukotta State (thro' The Dewan of Pudukotta.)	Do.
27	Do	do ...	M. R. Ry. Venkateswara Rao, Nuzvid.	Bobbili Maharajah's Prize.
28	Do	do ...	The College of Agriculture, Saidapet.	The Udayarpalayam Rajah's Prize.
29	Do	do ...	Mr. Chidambaranatha Moodelliyar, Shiyali.	The Sevalpatti Zemindar's Prize.
30	Do	do ...	The Mysore Government.	The Udayarpalayam Rajah's Medal.
1	Bronze medal	Collection of oils and oilseeds.	The Mysore Government.	
2	Do	Cardamoms ...	Satharangapara Cardamom Estate, Travancore.	
3	Do	do ...	Periacanal Cardamom Estate, Travancore.	
4	Do	do ..	Annamalai Planters' Association.	
5	Do	Tobacco-leaf ...	Messrs. Robinson & Co., Trichinopoly.	
6	Do	Sugarcandy ...	Mr. A. Ramalinga Chettiar (thro' I. E. C., Kumbakonum.)	
7	Do	Jaggery ...	Mr. H. D. Chatterjee, Indore.	

GROUP VII—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
8	Bronze medal	Confectionery ...	Messrs. Simon & Co., Madras.	
9	Do	do ...	Messrs. Harrison & Co., Madras.	
10	Do	Curry-powders ...	Messrs. V. Chelliapillai Chetty & Co., 32, Guruvappen Street, Madras.	
11	Do	do ...	Messrs. P. V. Iyasamy & Co., Madras.	
12	Do	Chutnees ...	Do	
13	Do	do ..	Messrs. V. Chelliapillai Chetty & Co., Madras.	
14	Do	Preserved fruits ...	Messrs. M. Pais & Sons, Mangalore.	
15	Do	Jams and Jellies ...	Messrs. V. Chelliapillai Chetty & Co., Madras.	
16	Do	do ...	Messrs. P. V. Iyasamy & Co., (thro' Messrs. Ellwood & Co., Madras.)	
17	Do	Confectionery ...	Victoria Bakery, Bombay.	
1	Prize of Rs. 5	Vegetables ...	Mr. A. E. C. Vas, the Catholic Community, South Canara.	The Udayarpalayam Rajah's Prize.
2	Do	do. (sweet potatoes)	The Mysore Government.	Do.
1	Highly commended	Preserved fruits ..	Messrs. Manockjee Poonjiajee & Sons, 173, Bora Bazaar Street, Fort, Bombay.	
2	Do	Chutnees ...	Mr. Krishnair of Sandapettai (thro' The Dewan of Pudukotta).	
3	Do	Sugarcandy ...	Mr. Mitayi Ranganatha Singh, I. E. C., Cuddapah.	

GROUP VII—(*continued.*)

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
4	Highly commended	Oils ...	Mr. Bobbili Yerakayya, (thro' H. H. the Maharajah of Bobbili.)	
1	Commended	Tobacco-leaf ...	Mr. N. A. Parthasarathi Chetty, Dindigul.	
2	Do	do ...	M. R. Ry. Venkateswara Rao, Dewan of Nuzvid.	
3	Do	Collection of fibres	The Mysore Government.	

GROUP VIII.—LEATHER, HORN AND PAPER.

1	Gold medal	Chrome-tanned cow hide for water bags.	Mr. K. Talati, Bombay.	Gudwal Rajah's Medal
2	Do	Collection of leather goods ...	Mr. Adamjee Peerbhoy, Bombay.	Mr.Chidambara natha Moodr's Medal.
3	Do	do . .	The N.-W. Tannery Co., Ld., Cawnpore.	Kollengode Rajah's Medal.
4	Do	High-class Book-binding.	S. P. C. K. Press, Vepery.	Oottukooli Rajah's Medal.
1	Silver medal	Sandals ...	M. R. Ry. Venkateswara Row Pantulu, Nuzvid.	Bobbili Maharajah's Medal.
2	Do	Book-binding ...	Messrs. Venkatakrishnamah Chetty & Son, Anderson Street, Madras.	
1	Bronze medal	Leather sandals ...	Mr. Thottathil Paththumma, Chalappuram, Calicut.	
2	Do	do ...	Industrial School, Ongole.	Do.
3	Do	do ...	Kitaram Thanni, Vayayilparamba, Thiruvangad, Tellicherry.	
4	Do	Book-binding ...	The Codialbail Press, Mangalore.	
1	Commended	Chrome-tanned goat skins ...	Mr. K. Talati, Bombay.	

GROUP IX.—POTTERY, PORCELAIN AND GLASS.

Number.	Name of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
1	Silver medal	Glass ware (blown)...	The Punjab Science Institute Workshop.	The Rajah of Dharakota's Medal.
2	Do	Modelling in clay (a man in a white jacket, full sized seated figure) ...	Mr. T. M. Govinda Pillai, The School of Arts, Madras.	Do.
3	Do	Green pottery ...	Mr. Krishna Udayar, Karikere village, Gudiyattam.	Do.
1	Bronze medal	Plaster bust of Fateh Singh Gaekwar ...	The Kala Bhavan, Baroda.	Do.
1	Commended	Plaster bust of a Hindu lady ...	Mr. Shivalal Ugarchand Bhutt, Baroda	
2	Do	Glass ...	Mr. N. B. Wagle, Bombay.	

GROUP X.—METALS AND JEWELLERY.

1	Gold medal	Decorative brassware.	The School of Arts, Jaipur.	Amarchinta Rajah's Medal.
2	Do	Locks ...	Messrs. Godrej & Boyce Manufrg. Co., near Gas Works, Parel, Bombay.	Hon. K. Vasudeva Aiyangar's Medal.
3	Do	Safes ...	Messrs. Godrej & Boyce Manufrg. Co., Bombay.	Jeypore Maharajah's Medal.
4	Do	Collection of fine silver-ware ...	Messrs. Barton, Son and Co., Bangalore.	Peddakimidi Rajah's Medal.
1	Silver medal	Brassware, various...	Messrs. S. Zoraster & Co., Jaipur.	
2	Do	do (trays) ...	Messrs. N. Bux, Kuda Bux & Co., Jaipur.	
3	Do	do (various) ...	Messrs. P. Md. A. Baksh & Co., Jaipur.	
4	Do	Fancy brass flies ...	Mr. P. L. C. Shunmugam Chetty, Murayur, Madura.	

GROUP X—(*continued*).

Number.	Nature of award.	Article or articles for which the award is made.	Name of Exhibitor.	REMARKS.
5	Silver medal	Metal-ware (encrusted)	Messrs. Kasiram Pandya & Co., Tanjore.	The V. K. Sabha's Medal.
6	Do	Cutlery ...	Messrs. S. Arunachellam & Sons, Salem.	The Rajah of Ettiyapuram's Medal.
7	Do	Locks ...	Mr. Sankaralingam Asari, Dindigul.	Do.
8	Do	do ...	Mr. Ponnusami Asari, Sivaganga.	
9	Do	do ...	Messrs. Ghose Dass & Co., Calcutta.	Mr. Sivasamy Odayar's Medal.
10	Do	Safes ...	Messrs. O. Senjoo Chetty & Co., Wall Tax Road, Madras.	Do.
11	Do	Collection of silver-ware ...	Mr. Krishnama Chetty, Bangalore.	Do.
12	Do	do ...	Messrs. T. R. Tawker and Sons, Mount Road, Madras.	Nadukami Zemindar's Medal.
13	Do	do ...	Mr. Daday Khan, Mount Road, Madras.	Do.
14	Do	Japanned boxes and trunks.	Messrs. G. H. Ismailjee & Bros., Karachi.	Mr. Venkatachella Moodr's Medal.
1	Bronze medal	Castings ...	The Kala Bhavan, Baroda.	
2	Do	Lead vessels ...	Mr. R. Chakrapany Chettiar, Kumbakonam.	
3	Do	Aluminium ware ...	The Christian Industrial School, Ongole.	Bobbili Maharajah's Medal.
4	Do	Punch, plyers, etc ...	Mr. J. Israel, Rev. Margoschis' Art and Ind. School, Nazareth.	
5	Do	Wires for musical instruments ...	Mr. Mariappa Chari, Channapatna, Bangalore District, Mysore.	Mr. S. Sreenivasa Row's Medal.

GROUP X—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
6	Bronze medal	Locks ...	Mr. G. Sundaram Asari, son of Arunachellam Asari, Ettyapuram.	
7	Do	Safes ...	Messrs. Harichand Manchharam & Sons, Bombay.	
8	Do	do ...	Mr. T. Appavoo Asari, Blacksmith Instructor, Technical Institute, Madura.	
9	Do	Fancy cylinder inlaid with silver.	Mr. S. Swaminatha Pathar, Tanjore.	
10	Do	Gold rakadi ...	M. R. Ry. Venkateswara Row Pantulu, Nuzvid.	**Bobbili Maharajah's Medal.**
11	Do	Rosewater sprinklers.	Messrs. Visvanatha Asari and Sons, Woriyur, Trichinopoly.	
12	Do	do ...	Messrs. T. Murugesa Buther & Co, 37, Iyemperumal Street, Royapettah, Madras.	
13	Do	Jewellery ...	Mr. T. P. Venkatesan Chetty, Big Street, Kumbakonam.	
1	Commended	A safe ...	Mr. Adiakalam Asari of Ooniyoor, Pudukotta.	**As the work of a village smith**
2	Do	Safes ...	Messrs. P. L. M. Moothia Chetty & Co., Madras.	
1	Money prize of Rs. 40.	Locks ...	Mr. Siva Sankaram Asari, Iron safe-maker, Rajapalaiyam Village, Srivilliputur Taluk, Tinnevelly Distrrct.	**Jeyapur Maharajah's Prize.**

GROUP XI—CHEMICAL INDUSTRIES.

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
1	Gold medal.	Scents ...	Mr. H. Bose, Perfumer, Calcutta.	The Dharakota Rajah's Medal.
2	Do	Soaps ...	The Bengal Soap Factory, Calcutta.	H. H. The Travancore Maharajah's Medal.
3	Do	Candles ...	Mr. Motilal K. Shah, Ahmedabad.	Boddinayakanur Zemindar's Medal.
4	Do	Matches ...	The Amrit Match Factory, Kota, C. P.	Mr. Balmukundoss' Medal.
1	Silver medal	Scents ...	The Kaisar Soap Manufacturing Co., Calcutta.	
2	Do	Attar and native perfumery.	Messrs. T. A. Rahman and Sons, Madras.	H H. The Travancore Maharajah's Medal.
3	Do	do ...	Mr. K. Srinivasa Rangachariar, Mysore.	
4	Do	Soaps ...	Messrs. M. Thacker & Co.,Soap Manufacturers, Bombay.	Mr Balamukundoss' Medal.
5	Do	Matches ...	Messrs. Gokhale Bros., Sayaji Works, Vyara, Baroda.	Do.
6	Do	Inks ...	Messrs. Hoe & Co., Madras.	The Dharakota Rajah's Medal
1	Bronze medal	do ...	Mr. K. D. Daniel, Calcutta.	Amarchinta Rajah's Medal.
2	Do	do ...	Messrs. Rustom Bros., Bombay	Gudwal Rajah's Medal.
3	Do	Chemical manufactures.	Mr. Motilal K. Shah, Ahmedabad.	Dr. Varadappa Naidu's Medal.
1	Commended	Attar billais and garlands.	Messrs. Buchamia Saheb & Co., of Pudukotta.	
2	Do	Solid bouquet perfumes.	Messrs. H. Bana & Co., Navsari, Baroda.	

GROUP XI—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
3	Commended	Soaps ...	Messrs. B. L. C. Amin & Co., The Ripon Soap Factory, Bombay.	
4	Do	Candles ...	Mr. D. Correa, Mangalore.	
5	Do	do ...	Mr. C. Correa, Mangalore.	
6	Do	Camphor beads ...	Mr. G. Venkanna, Chicacole.	
7	Do	Chemical manufactures.	The Kala Bhavan, Baroda.	
8	Do	Inks ...	Mr. R. Banerjee of Meherpur P. O., Dt. Nadia, Bengal.	
9	Do	do ...	Mr. Dossabhoy H. Gimi, Bombay.	

GROUP XII.—FURNITURE.

1	Gold medal	Large carved side-board.	Mr. S. Muthusami Asari, Carpentry Instructor, Technical Institute, Madura.	The Cooch-Behar Maharajah's Medal.
1	Silver medal	Carved blackwood flower vase, and carved teakwood wall bracket.	The Kala Bhavan, Baroda.	
2	Do	Jewel cases, boxes, etc.	Messrs. P. A. Thambiappa Naicker & Co., Choolay, Madras.	
3	Do	Table and seat combined.	Wesleyan Mission Ind. School, Karoor.	
4	Do	Carved side-board ...	The Aryan Factory, Madras.	
5	Do	Carved blackwood side-board.	Messrs. Deschamps & Co., Madras.	

GROUP XII—(*continued*).

Number.	Nature of award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
1	Bronze medal	Carved writing table	The Central Jail, Cannanore.	
2	Do	Teakwood cabinet, German style.	The Kala Bhavan, Baroda.	For Carpentry, The Udayarapalayam Medal
3	Do	Brushes ...	do	
4	Do	do	Messrs. Mohunlal Baiji & Co., Ahmedabad.	
1	Commended	Fretwork table ...	Mr. F. D. B. Bullmore, Egmore, Madras.	
2	Do	Folding book racks.	Rev. E. P. Hotton, M.A., Mana Madura.	
3	Do	Carved lamp stand...	Mr. S. Muthusami Asari, Carpentry Instructor, Technical Istitute, Madura.	

GROUP XIII.—FINE ARTS.

1	Gold medal	Carved ivory tankard.	The School of Arts, Trevandram.	The Maharajah of Jeypore's Medal.
2	Do	Carved sandalwood box.	The Palace Division, Mysore D.P.W.	The Cooch-Behar Maharajah's Medal.
3	Do	Carving in soap-stone	do	The Maharajah of Jeypore's Medal.
4	Do	Inlaid ivory work ...	Mr. G. Ramalingam, Vizagapatam.	Bobbili Maharajah's Medal.
1	Silver medal	do ...	Mr. G. C. Veerannah, Vizagapatam.	Do.
2	Do	Oil-painting 'A Bathing ghaut.'	Mr. J. P. Gangooly, Calcutta (thro' Indian Stores).	
3	Do	Oil painting, a Malabar temple ...	Mr. C. Damodara Nambiar, Tiruvangad, Tellicherry.	Mr. Mangat Gopala Menon's Medal.
1	Highly commended	Inlaid work in stone.	Mr. G. Ramalingam, Vizagapatam.	

GROUP XIII—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
1	Commended	Oil painting ...	Messrs. R. J. Bhudhwarkar, Baroda.	
2	Do	Photographs ...	Messrs. R. Venkiah Bros., Mount Road.	
3	Do	Picture printing process.	Mr. U. Ray, Calcutta.	
4	Do	Carving in ivory ...	Mr. M. Subramanya Asari, Ettiyapuram.	
5	Do	Sandalwood box (album boards).	Mr. G. Subraya, Soraba, Shimoga.	
6	Do	Figure carving in stone.	Mr. Surajmal Maliram, Jaipur.	

GROUP XIV.—MISCELLANEOUS.

1	Gold medal	State dress landau...	Messrs. Simpson & Co., Madras.	**Bodinayakanur Zemindar's Medal.**
1	Silver medal	Carriages ...	Messrs. Laljee Ranchodjee and Son, 15, Loharchal, Bombay.	
2	Do	do ...	Messrs. Ally Bros., Mount Road, Madras.	
3	Do	Cricket goods ...	The Imperial Sports Works, Sialkot City.	
4	Do	Cricket balls ...	Mr. J. B. Vania, Cycle & Sports Works, Sialkot.	
5	Do	Walking sticks ...	Mr. Suppanasari, Maistry, D. P. W. Workshop, Pudukotta.	**The Rajah of Ettiyapuram's Medal.**
6	Do	do ...	Messrs. Esuf Ali & Sons, Mysore.	
7	Do	Lacquered and painted Toys.	Mr. Veeriah, Kondapally.	
8	Do	Toys ...	Mr. R. L. C. Shunmugam Chetty, Murayur, Madura.	

GROUP XIV—(*continued*).

Number.	Nature of Award.	Article or articles for which the award is made.	Name of Exhibitor.	Remarks.
9	Silver medal	Lacquer work ...	The Kala Bhavan, Baroda.	
10	Do	Gesso work ...	Mr. Chittari Chinna Subhanna, Nandyal, Kurnool District.	Mr. K. Srinivas Rao's Medal.
1	Bronze medal	Walking sticks ...	Mr. Ganeshayya, Mysore Section.	
2	Do	do ...	Mr. Ramaswami Ayya, Mysore Section.	
3	Do	Basket work ...	Mr. Kota Thavidu, Parlakimidi.	Bobbili Maharajah's Medal.
4	Do	do ...	Mr. Kota Jammiah do.	Do.
5	Do	Toys ...	Mr. Krishniah, Chennapatna, Mysore.	
6	Do	do ...	Mr. Ratna Udayar c/o Arunachella Udayar, Karikeri Village, N. Arcot.	
7	Do	do ...	Mr. Rama Pannicker, Ooragom Provurthy, Trichur Taluk, Cochin.	
8	Do	do ...	Mr. Keshowlal Laloobhai Maistry, Baroda.	
9	Do	Bead-work ...	Mrs. Rajarathnammal, c/o. Mr. A. V. Rajagopala Moodelliar, Chitapur, N. G. S. R.	
10	Do	Bison head stuffed and mounted.	Mr. K. Sankara Panicker, Nemmara, Chittur Taluk, Cochin.	
1	Commended	Handwriting ...	Mr. P. Achutan c/o. Messrs. P. Orr and Sons, Madras.	
2	Do	Ivory bangles ...	Mr. Himatram Sunderlal, Surat.	

CLOSING OF THE MADRAS INDUSTRIAL AND ARTS EXHIBITION.

The Madras Industrial and Arts Exhibition held under the auspices of the 19th Session of the Indian National Congress, came to a close on the evening of 18th January 1905. The Exhibition, it will be remembered was opened by His Highness the Maharajah of Mysore on the 26th December last in the presence of a very brilliant gathering and attended with the highest pitch of popular enthusiasm. During the twenty-three days the Exhibition was on view, immense numbers of people, Europeans and Indians, men, women and children, benefited themselves by the sight, and in many cases by the study, of the rare and the most valuable works of art and industries that had been collected together. It can be truly said of the Exhibition now, that the idea of it has reached the homes of even the poorest, and with more efforts to encourage and promote trade in the industrial and art products exhibited, the ultimate and happy results of the Exhibition would be assured. The Committee of the Industrial Exhibition in Madras have laid the public, nay the whole of India, under a deep debt of gratitude for the magnificent success they have secured for the Exhibition, and but for the unsparing efforts and self-sacrifice of the few on whom the brunt of the labour fell, Madras would have missed the golden opportunity of doing a good turn to the declining arts and industries of this land. The devotion of those who made the Exhibition the great and undoubted success that it was, deserves our heartfelt admiration, and notwithstanding the proud satisfaction of having achieved such a success, the relief from the severe strain to which they had been put, and which relief they were able to obtain only yesterday, must have come as a most welcome variation from the arduous labour of months.

The actual closing of the Exhibition to the public was preceded by a most agreeable function on the night of Saturday, 16th instant, which shared in large measure the general and uniform success of everything connected with the Exhibition. The function was a Reception given by the Exhibition Committee in honor of the exhibitors, who, with a number of the Judges, and many other gentlemen of light and leading in Madras, were treated to an entertainment which the Committee had provided for them in the presence of an impressive gathering assembled in the Exhibition *Shamiana* in front of the main pavilion. The proceedings in connection with this function commenced with a short speech from the President of the Committee,

followed by the announcement of the awards, consisting of the various medals of gold, silver and bronze, and certificates, which the Judges had awarded after careful consideration. These announcements over, Mr. Edgar Thurston, the Superintendent of the Madras Government Museum, in a humorous and greatly appreciated speech congratulated the Committee, the Secretaries, the President, the Judges and all who had contributed to the general success, with which he admitted he had been highly struck.

The President of the Exhibition Committee, the Hon'ble Mr. Sankaran Nair, in a short speech thanked the exhibitors and other gentlemen who had contributed to make the Exhibition a success. The Mysore section of it, he said, could not be too highly praised; so too Hyderabad and Baroda contributed in no small measure to the success of the year's show. Coming to the Madras Presidency, he observed almost all the districts were well represented and their thanks were due to the Committees of those districts. It was difficult to specify the various exhibitors who deserved special mention, but he would refer among others to Messrs. Binny and Co., Parry and Co., The Basel German Mission, and Henke's of Feroke. It was not to be understood that because he had left out others, the Committee and the Judges did not appreciate their efforts, but it was difficult to enumerate them all. As to exhibitors from other parts of India, particularly those from Bengal, the Punjab and Bombay, they must have taken considerable trouble in preparing and forwarding their exhibits, and the Committee was very much obliged to them for all their trouble. It was a real surprise to many educated men of the community to see that Indian labour could supply many things for which they had hitherto relied upon imports from foreign countries. It was under contemplation to take steps to bring Indian industries before the public of the Presidency more prominently. The Committee had not been able to ascertain the exact number of visitors to the Exhibition, but he was informed by the contractor that the number might be taken at 60,000. The daily attendance showed increasing interest, but they could not keep the Exhibition open any longer. The future would profit by the experience gained in connection with the present Exhibition. The Committee had to express regret that it had to reject numerous exhibits. Their thanks were due to the Judges who had a difficult and invidious task to discharge. The volunteers also deserved thanks for the great help they had rendered, while the Police had kept excellent order within the precincts of the pavilion; and all those who had visited the Exhibition would have seen how difficult it was on certain occasions to preserve order as the rush was great and the trouble proportionately great. For the fine pavilion in which the exhibits were

located they owed their thanks to Rao Saheb T. Numberumal Chetty. He (the President) was pleased to learn that the gate contractor had been uniformly courteous to the thousands of visitors to the Exhibition ; while the Madras Municipality rendered all assistance in their power.

The list of prizes was then read to the assembly.

Mr. Edgar Thurston said :

I came here to spend a pleasant evening, but it has just been broken to me that a speech is expected of me. In the first place I may I hope, be permitted to offer my hearty congratulations to all concerned on the great success of their efforts. Whenever an exhibition is knocking about, I scent it from afar, and I scented this one from the Pantheon Road, in the early days of October, when this fine temporary building was represented by six casuarina posts stuck in the ground. The arrangements were so backward that I warned the executive, only a week before the opening day, that they were riding for a disaster, and would have to give up all idea of an Industrial Exhibition, and confine themselves to an exhibition of the Members of the Committee, who would make a brave show. However, the work went on apace, with the assistance of many willing hands, and you have, as the result of your labours, an Exhibition, illustrating the arts and industries of various parts of India, of which you may well be proud.

The opening ceremony was a brilliant success. The Exhibition rapidly achieved great popularity, and has been visited by enormous crowds, but the 'gate-contractor' will not take me into his confidence, and own up how much money he has taken. With the Exhibition itself I really had very little to do. But I was, unhappily for myself, invited to become President of the judges, and accepted the office. Now I claim considerable experience as a judge at exhibitions, gained not only in Madras, but also at Delhi, and I can honestly say that I have never known the work of judging more thoroughly and more conscientiously carried out. The manner in which the judges in the textile section performed the difficult task of examining and adjudicating on the huge mass of material, more especially filled me with admiration. The judges of oil-seeds and food grains met with an unexpected difficulty, for, as a result of the heavy rain, some of the seeds germinated into a fine crop of seedlings.

The medals were divided into three classes, gold, silver, and bronze, and I was specially anxious concerning the award of the gold medals. The artisan is familiar with the relative value of these metals, and a

man who received a gold medal would not unnaturally conclude that the judges considered his work of the highest quality, such as they would wish to see reproduced. It was arranged, therefore, that the awards of gold medals should be decided by a majority of the whole board of judges in conclave. There is an old saying 'So run all, but one receiveth the prize.' In the present instance the number of competitors has been large, and medals and certificates have been bestowed with a liberal hand. To those, whose exhibits have not received recognition at the hands of the judges, I would only say that, if anyone is to be hung, I am the man. But they must hang me quickly, as I am off to England immediately.

Of one thing I am perfectly certain, and that is that, when they started the work of organising the exhibition, the executive had no idea of what they were letting themselves in for. However, they all look very well after their labours, and will, I hope, be here to run another exhibition a few years hence. Last year you may remember we held a scientific conversazione at the Museum, and I constantly receive letters, enquiring whether we are going to have another "conversation" this year. My reply is invariably that we have no idea of running another show of the same kind for at least five years. And so with the exhibition. The charm of novelty has worn off for the moment. But five years hence a new generation will have grown up in the city, new industries will, I hope, have arisen, and, with the wisdom gained by the experience of the present Exhibition, you ought to be able to steer another to a still more successful issue. And now, before sitting down, I will once more congratulate the Committee and Secretaries on the very great success of their undertaking.

After Mr. Thurston had spoken, refreshments, European and Indian, were served to the guests assembled. Interesting performances, and a monster phonograph completed the rest of the entertainment which the Committee had so very kindly afforded to the guests.

The proceedings terminated with three cheers for the Executive Committee, the Secretaries and the Judges.—*Hindu* (revised).

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„	10	Mr. H. Landale	Harnabhai Landjee of Yeotmal
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ANNUAL
PROGRESS REPORT
OF THE
ARCHÆOLOGICAL SURVEY DEPARTMENT,
SOUTHERN CIRCLE, MADRAS
FOR THE YEAR
1912-1913.
PART I.

Work at Head-quarters.

In order that Mr. A. Rea should be able to devote more time to the preparation of a catalogue of the large collection of pre-historic and other antiquities that have accumulated at the Madras Museum as the result of excavation works conducted by this department in the past, Government in No. 853, Public, dated the 16th July 1912, ordered me to take over charge of the office and establishment on the 6th August 1912. Mr. Rea, however, was left in charge of the conservation work in the following five districts :—North Arcot, South Arcot, Chingleput, Nellore and Chittoor.

2. As I found the services of an Office Manager unnecessary, M.R.Ry. P. V. Jagadisa Ayyar, late Manager of this Office, was appointed as Mr. Rea's Assistant at the Museum. In this connection, the services of the Head Photographer, Temporary Clerk, Duffadar, and four lascars were also placed at Mr. Rea's disposal.

3. The conservation work in the five districts allotted to Mr. Rea was subsequently found to interfere with the progress of his special work at the Museum; so Government decided in G.O. No. 2, Public, dated the 2nd January 1913, to place all the conservation work in my charge so that Mr. Rea might be free to devote the whole of his time to the completion of the work at the Museum.

Clerical Work.

4. The late Head Clerk, T. V. Sundaram Ayyar, resigned his appointment and C. S. Sundaram Ayyar has succeeded him.

V. S. Chakrapani Ayyangar, temporary clerk and typist to Mr. Rea at the Museum, resigned his appointment at his own request in order to try and improve his prospects elsewhere. N. Ramachandra Rao was appointed as office typist and P. S. Subramania Ayyar was appointed by Mr. Rea to act as his temporary clerk and typist at the Museum.

Preparation of drawings

5. The two temporary draftsmen have made steady progress towards the completion of the numerous unfinished drawings in the office. The few new drawings that have been prepared during the year under report are given in Appendix A. As photography is not only less expensive than the laborious process of hand drawing but is far more reliable, and indeed the only means of illustration now accepted as conclusive evidence by Archæologists in Europe, wherever possible, photographs have been made to take the place of drawings. However, the employment of one draftsman will always be necessary in the preparation of plans and sections of buildings; for without these, special articles relating to different styles of architecture would be of no scientific value. The Head photographer now on duty at the Museum assisting Mr. Rea was formerly Head Draftsman of this office; when

the work at the Museum is finished, it would be advisable to let him revert to his former post as Head Draftsman, as we already have two good photographers in the office and I doubt if there would be sufficient continuous work for three men. In this manner, there need be no extra expenditure on establishment when the period for which the temporary draftsmen are employed expires in October 1913.

6. The Government of India has decided that in future each Superintendent of a Circle shall be responsible for the safe-custody of the negatives belonging to his office and the Director-General of Archæology has been requested to return the old negatives to their respective Circles. As many of these have become unserviceable it will be necessary to overhaul and renumber the entire lot when they are received in this office. In future, the negatives will be arranged into separate classes relating to different styles of Indian Art and Architecture and a list of all the negatives taken by this department will eventually be published and made available to the public. The list is now under preparation, and so far as it is complete, it is shown in Appendix B. Some three thousand negatives will have to be examined, and probably some two thousand will require renumbering before a complete list of them can be prepared. During the year under report twenty-one applications for photographs from the public were received and we supplied 417 prints at a total cost of Rs. 178-14-0 which has since been received and paid into the Bank of Madras to the credit of the Government of India. As per Government Orders, Mr. E B. Havell was supplied with 22 photo-prints in connection with another new work he is preparing on Indian Art, and the Assistant Archæological Superintendent for Epigraphy was supplied with 32 photo-prints during the year under report. A new full-plate camera and outfit was purchased at a cost of Rs. 915 and one of the old cameras was fitted with a telephoto-lens at a cost of Rs. 70. The latter has proved most useful in obtaining photographs that otherwise could only have been obtained by going to the expense and trouble of erecting temporary scaffolding.

Two hundred and forty-seven new negatives have been prepared this year and are included in the list shown in Appendix B.

7 In April last, I submitted to Government an illustrated article on "The influence of the umbrella on Indian Architecture", which Messrs. W.Griggs & Sons, the London Art Printers, have since been pleased to accept and are going to publish free of cost as a complete number of the "Journal of Indian Art." I was led to write this humble little article after reading Professor Macdonell's illuminating paper on "Buddhist and Hindu Architecture," read before the Royal Society of Arts in February 1909, with a view to supporting his theory concerning the evolution of the Buddhist Stupa with some additional evidence collected on the spot. Although we have a few sculptural examples of little shrines portrayed in the Sanchi and Bharhut bas-reliefs as existing contemporaneously with Buddhist Stupas, this, does not alter the fact that the solid masonry stupa itself subsequently became transformed into a hollow chamber or temple enshrining an image of Buddha or a Buddhist saint. When the atheism of the Buddhism of the earlier age gave place to an overwhelming idolatry, the stupa or relic mound naturally lost its significance as a religious edifice as it was no longer required as an object of worship in India.

Messrs W. Griggs & Sons inform me that my article is to appear as No. 122 of the "Journal of Indian Art" appearing in April 1913.

Two illustrated articles, one relating to "Ancient Brick Temples in the Central Provinces" and the other, "A report on a Rock-cut Tomb near Calicut", were prepared and submitted to the Director-General of Archæology for publication in his next "Annual". The article on the Brick Temples was prepared from material collected on the subject when I was in charge of the Eastern Circle. These temples belong to about the 8th century A.D., and are valuable additions to the many proofs that we now possess, that the temple architecture of the Hindus is directly descended from the older art of the Buddhists. In fact, it may be safely stated here or anywhere else, that the only difference between a late Buddhist temple and an early Hindu temple, is in the nature of the idol enshrined in the cella. In plan, architectural style and decoration, and in some cases even in the sculptures, there is no appreciable distinction, so much so, that when the image originally enshrined in a sanctum is missing, or there are no inscriptions to guide one, it is sometimes impossible to be certain whether an early structure is Buddhist or Hindu in origin.

Another similar group of brick temples belonging to the same early period situated near Cawnpore, is described and illustrated in the "Annual Report of the Archæological Survey of India for 1908–1909." The article is written by Dr. Vogel, but is largely compiled from material supplied by me when I was in charge of the Northern Circle. Since so few structural temples of the 7th or 8th century exist, the value of these two groups of ancient monuments, illustrating as they do, the early growth and development of Hindu temple architecture, cannot be overestimated.

In the same "Annual" will be found two very interesting and well-illustrated articles by Mr Rea concerning some excavations conducted at Amarāvati and Perambair a short time ago. Mr. Rea's discoveries at Amarāvati are hardly of less value than those made by Dr. Spooner near Peshāwar in 1908, about which so much has been said and written.

I was asked by Dr. Vogel, when he was recently officiating as Director-General of Archæology, to prepare illustrated Guide Books to Hampi Ruins and the Seven Pagodas. I thoroughly agree with Dr. Vogel that these works are necessary, and if they are to be accurate they should certainly be prepared by this department which already possesses much of the necessary material. The only difficulty is to find time for the work. The increase in official correspondence with the Public Works Department, the Collectors, and other district officers, together with the vast amount of inspection work requiring attention leaves but little leisure for special publications. This fact was realised by the Government of India some years ago when officers of this department were then permitted to spend three months of the year at a hill station in order that they might write up their reports and prepare special articles on Indian Archæology for the benefit of the public But it should be remembered that in these days of very much increased work there is no cessation of the ordinary routine of the office during the recess; a temporary change of head-quarters and a lull in the field work is all that takes place during this period. This break in the inspection work makes a considerable difference in the amount of time available for the preparation of special articles, but the total amount of time available for work of this kind during the recess would hardly amount to more than one clear month out of the three allowed

District officials and others who take an interest in the monuments in their districts will be glad to learn that Government has instructed the Assistant Superintendent for Epigraphy to prepare a handbook on the "Iconography of Southern India." The want of an illustrated handbook explaining the various sculptural representations of Hindu deities portrayed on or inside the temples, must have been felt by practically every one who has ever paid a visit to any of the important shrines of Southern India

List of Ancient Monuments.

8. Several new monuments have been added to the list, and a few have been struck off, as these were found after personal inspection to be of no particular architectural or historical value Here and there a few corrections concerning the names of the monuments, or the locality in which they are situated have been made. In preparing my printed conservation notes on monuments inspected, as a rule, I have given a description of the locality, the building, and its history, providing this has not already appeared in the Gazetteer, with a view to having this material ready when the preparation of a new "List of Antiquarian Remains in the Madras Presidency" is undertaken.

Office Library.

9. A list of the few new books acquired during the year under report is given in Appendix C.

Excavation.

10. No new excavation works have been undertaken during the year under report as no time was found available Several new sites have come to light and some of these I hope to investigate during the coming year In G.O No. 198, Public, dated the 11th February 1913, Government was pleased to accord sanction to my proposal to open some of the prehistoric cairns situated in the neighbourhood of Mettupalaiyam in the Coimbatore district. Many of these cairns which are scattered about this neighbourhood in a number of groups have already been rifled of their contents by treasure-seekers, or removed to make way for cultivation Fortunately, there are still some left which have not been disturbed, and these I propose to investigate during the coming year Although a considerable amount of excavation has been conducted in Southern India by this department in the past, many interesting

ancient sites still await investigation. The importance of this branch of archæology in tracing the early history and development of the arts in Southern India cannot be overestimated, and in all probability, it will be found that no fresh discoveries of antiquarian importance will come to light so long as this work remains neglected. I have already drawn attention to the important discoveries made by Mr. Rea at Amaravati and Perambair, and further work in this direction will no doubt lead to many more interesting finds being made.

Treasure Trove.

11. Several treasure trove cases have been brought to the notice of this department during the year under report either by the Collector in whose district the find occurred, or by the Superintendent of the Government Museum. As it is presumed that a list of these cases will appear in the museum report there is no necessity for me to cite them here.

Tours.

12. In G.O. No. 1452, Public, dated the 28th November 1912, officers of this department were directed to submit by the fifth of each month a statement giving the dates and other particulars of the tours undertaken by them and their establishment during the previous month, so it will serve no useful purpose to again repeat these details here. Altogether 163 days have been spent on tour, and the following districts have been visited by me :—

Anantapur, Bellary, Tanjore, Cuddapah, Nilgiris, Ganjām, Kistna and Chingleput.

Tour Programme for 1913-1914.

13. A list of the archæological works proposed to be undertaken during the coming year is shown in Appendix D. Besides these, there are a number of monuments awaiting inspection before any repairs can be carried out at Government expense, as it is not yet known whether they are of sufficient historical or architectural value to justify any subvention by Government. Hampi Ruins and the Seven Pagodas are places which require inspecting at least once every year in order to see that these valuable monuments are being maintained in good order and repair. If time permits, I hope to excavate some of the prehistoric cairns in the Coimbatore district referred to in paragraph 10 above. Beyond inspecting the Asoka Rock inscription in the Ganjām district, I have not yet had time to visit any of the other interesting Buddhist sites in the northern districts of the Presidency. These, I hope to be able to visit during the next field season, as they are of far more real archæological value than many of the great Hindu monuments of the south

Expenditure on Conservation Works.

14. A statement showing the expenditure incurred on repairs to ancient monuments during the year is given in Appendix E. The sum of Rs. 45,000 was provided in the budget out of which a total sum of Rs. 36,929-3-2 was spent up to the 31st March 1913.

Conservation.

15. Conservation notes relating to the ancient monuments inspected during the year under report have already been submitted to Government in most cases. so there is no necessity to repeat these notes in detail here. Last year, owing to delay in this office and also at the Government Press, the notes I prepared for incorporation in Mr. Rea's report were received too late for inclusion. A summary of these notes together with those written since will be found in Part II of this report.

Annual Expenditure

16. The expenditure of the Southern Circle of the Archæological Survey department, during the year under report, has been as follows:—

	Rs.	A.	P.
Salaries of the Superintendent and Additional Superintendent.	15,900	0	0
Travelling allowances do.	3,019	6	0
Salaries of establishment inclusive of temporary staff ..	5,187	15	11
Travelling allowances do. ..	1,550	9	2
Supplies and services	3,742	6	4
Contingencies	3,880	14	3
Compensation for dearness of food	220	8	4
Total ..	33,501	12	0

MADRAS,
31*st March* 1913.

A. H. LONGHURST,
Additional Superintendent, Archæological Survey Department, Southern Circle.

APPENDIX A.

List of New Drawings completed during 1912–1913.

Serial number.	Locality.	Subject.	Scale.
1	Ganjām district .. .	Site plan of Aśōka's rock inscription at Jaugāda	1/5
2	Nilgiris	Site plan of Kōta temples at Kotagiri	1/8
3	Nilgiris	Plan and section of a Kota Temple, Kotagiri	1/4
4	Nilgiris	Site plan of group of dolmens at Batlāda Acheni	1/4
5	Nilgiris	Plan of large dolmen at Jakkaneri	1/4
6	Nilgiris	Plan of dolmen at Jakkata	1/4

APPENDIX B.

New List of Photographic Negatives.

CLASS A.

Primitive Stone Monuments and Antiquities.

Serial number	Size.	Subject.	Locality.	District.
A. 1	Full . .	Virakal (Hero-stone)	Rolla	Anantapur.
A. 2	Full .. .	Shepherd's shrine	Āvalamali	Cuddapah.
A. 3	Full	Inscribed stone	Āvalamali	Cuddapah.
A. 4	Full	Virakal (Hero-stone)	Āvalamali	Cuddapah.
A. 5	Full . ..	Virakal (Hero-stone)	Āvalamali	Cuddapah.
A. 6	Full	Vīrakal (Hero-stone)	Āvalamali	Cuddapah.
A. 7	Full	Virakal (Hero-stone)	Āvalamali	Cuddapah.
A. 8	Full . ..	Large and small Cinerary Urns	Kuttalam .. .	Tinnevelly.
A. 9	Full . .	Cinerary Urn with pointed base ..	Kuttalam	Tinnevelly.
A. 10	Full .. .	Group of ancient pottery	Kuttalam	Tinnevelly.
A. 11	Full	Ancient domestic vessels	Kuttalam .. .	Tinnevelly.
A. 12	Full ..	Cinerary Urn with stand	Mēlaperumba ..	Malabar.
A. 13	Full	Cinerary Urn with legs	Mēlaperumba ..	Malabar.
A. 14	Full . ..	Group of Cinerary Urns and pots .. .	Mēlaperumba ..	Malabar.
A. 15	Full .. .	View of a cairn	Mettupalaiyam ..	Coimbatore
A. 16	Full	Kōta temple (front elevation)	Kotagiri	Nilgiris
A. 17	Full	Kōta temple (general view) .. .	Kotagiri .. .	Nilgiris
A. 18	Full ..	Kōta memorial	Kotagiri	Nilgiris
A. 19	Full .. .	General view of dolmens	Batlāda Acheni .	Nilgiris
A. 20	Full	General view of dolmens	Batlāda Acheni ..	Nilgiris
A. 21	Full	Detail of sculptured dolmens ..	Batlāda Acheni .	Nilgiris
A. 22	Full	Virakal (Hero-stone)	Batlāda Acheni ..	Nilgiris
A 23	Full . ..	Sculptured dolmen	Jakkāta . .	Nilgiris.
A. 24	Full	Sculptured dolmen	Jakkaneri	Nilgiris
A. 25	Full	Sculptured dolmen	Haluru . ..	Nilgiris
A. 26	Full . ..	Detail of sculptured dolmen ..	Haluru	Nilgiris.
A. 27	Full . .	Detail of inscribed sculptured dolmen ..	Melur ..	Nilgiris.
A. 28	Full ..	Detail of sculptured dolmen	Melur	Nilgiris
A. 29	Full .. .	Ornamental pottery discovered in a cairn by Mr. Breeks	Nilgiris	Nilgiris.
A. 30	Full . .	Inscribed stones near Pitakesvara temple.	Kōnakondla .. .	Anantapur.
A. 31	Full	Inscribed stones near Bhōgēsvara temple.	Konakondla	Anantapur
A. 32	Full .. .	Inscribed stones near Sankaratevar temple.	Konakondla	Anantapur.
A. 33	Full	Virakal lying near the village	Vānavolu	Anantapur.
A. 34	Full .. .	North-east view of large dolmen on a rocky hillock, north-east of Kalyāndrug.	Kalyāndrug	Anantapur.
A. 35	Full	Remains of a large oblong cairn to the north of the rocky hillock.	Kalyandrug	Anantapur
A. 36	Full	Remains of a large oblong cairn to the west of the rocky hillock	Kalyandrug .. .	Anantapur
A. 37	Full	Group of prehistoric memorial stones to south-west of the rocky hillock.	Kalyandrug	Anantapur
A. 38	Full	Hindu memorial stones, outside the temple at the foot of the Dēvadūlabetta Hill.	Kalyāndrug . ..	Anantapur.
A 39	Full	Sculptured dolmen	Kalyāndrug	Anantapur.
A. 40	Full	Small oblong cairn	Kalyandrug	Anantapur.
A. 41	Full ..	Prehistoric memorial stone at the foot of the Dēvadulabetta hill.	Kalyāndrug ..	Anantapur.
A. 42	Full	Large circular cairn two miles north-east of Kalyandrug.	Kalyandrug .. .	Anantapur.
A. 43	Full ..	Large circular cairn, one mile north of Kalyāndrug.	Kalyandrug ..	Anantapur.

CLASS A—*cont.*

Primitive Stone Monuments and Antiquities—cont.

Serial number.	Size.	Subject.	Locality.	District.
A. 44	Full	General view of prehistoric necropolis	Mudigallu	Anantapur.
A. 45	Full	Oblong cairn on the hill .. .	Mudigallu	Anantapur
A. 46	Full	Cell-tomb on the hill .. .	Mudigallu .. .	Anantapur.
A. 47	Full . ..	Ruined cell tomb with double stone circles on the hill.	Mudigallu	Anantapur.
A. 48	Full	Front view of sculptured dolmen, half a mile to the west of Mudigallu	Mudigallu	Anantapur.
A. 49	Full ..	General view of sculptured dolmen, half a mile to the west of Mudigallu.	Mudigallu	Anantapur.
A. 50	Full . ..	North-east view of dolmens converted into Siva shrines.	Kambadūru	Anantapur.
A. 51	Full	South-east view of large dolmens converted into Siva temple.	Kambaduru	Anantapur.
A. 52	Full . ..	Virakal lying in the Bhogēsvara temple	Chippagiri	Bellary.
A. 53	Full . ..	General view of prehistoric mound ..	Kudatini ..	Bellary.
A. 54	Full	Basement of prehistoric mound .	Kudatini . .	Bellary.
A. 55	Full . .	East view of sculptured dolmen near the Taluk office	Rāyadrug .. .	Bellary
A 56	Full	Inscribed memorial stone . ..	Hulibidu . .	Bellary
A. 57	Full . ..	Sculptured pillar from Kota temple .	Kotagiri . .	Nilgiris
A. 58	Full ..	Sculptured pillar from Kota temple .	Kotagiri	Nilgiris.
A 59	Full .	Inscribed stone outside the temple on the south east.	Ayōdyāpatnam ..	Salem.
A. 60	Full .	Inscribed stone lying in the village	Nedumaram .. .	Chingleput.
A. 61	Full	Selected pot cry ..	Kaniyampundi ..	Coimbatore
A 62	Full	Selected potterv	Kaniyampundi ..	Coimbatore.
A 63	Full . .	Selected pottery discovered in the caves	Perunkulam . ..	Malabar.
A 64	Full .	Selected pottery discovered in the caves	Perunkulam .. .	Malabar.
A 65	Half .. .	Iron implements, stand, etc , discovered in the caves	Perunkulam	Malabar
A 66	Half	Flint stone, mortar and pestle discovered in the caves	Perunkulam ..	Malabar.
A. 67	Full .. .	East view of dolmen	Amelapalli .	Cuddapah.
A 68	Full	South east view of dolmen ..	Amelapall . ..	Cuddapah.

CLASS B

Buddhist Art and Architecture

Serial number	Size.	Subject	Locality	District.
B. 1	Full	South view of rock-cut inscriptions of Aśōka	Jaugāda	Ganjam.
B. 2	Full . ..	Carved marble slab from Amarāvati	Bezwada museum ..	Kistna.
B. 3	Full . .	Large marble image of Buddha from Amarāvati	Bezwada museum	Kistna.
B 4	Full .. .	Buddha image inside the museum	Bezwada museum ..	Kistna.
B. 5	Full ..	Impressions of the seals, bronze ring, lead coin, etc , discovered on the Gurubhakthakonda hill	Rāmatirtham ..	Vizagapatam.
B 6	Half .	Earthern Pilaster discovered on the Gurubhakthakonda hill.	Rāmatirtham ..	Vizagapatam.
B 7	Half .. .	Ornamental pottery (selected) on the Gurubhakthakonda hill.	Rāmatirtham .	Vizagapatam.
B 8	Half	Earthern spouts and bone on the Gurubhakthakonda hill.	Rāmatirtham ..	Vizagapatam.
B. 9	Half .. .	Iron implements (selected) on the Gurubhakthakonda hill.	Rāmatirtham	Vizagapatam.
B 10	Half .	First panel from the Amarāvati sculptures in the Government Central Museum	Madras ..	Madras.
B 11	Half .	Second panel, from the Amarāvati sculptures in the Government Central Museum.	Madras .	Madras.
B. 12	Half . .	Third panel, from the Amaravati sculptures in the Government Central Museum.	Madras .	Madras.
B. 13	Half	Fourth panel, from the Amaravati sculptures in the Government Central Museum	Madras	Madras.
B. 14	Full .	General view of the above four panels together	Madras .. .	Madras
B. 15	Full ..	Ornamental pottery (selected) discovered on the Gurubhakthakonda.	Rāmatirtham ..	Vizagapatam
B. 16	Half	Oranamental pottery (selected) discovered on the Gurubhakthakonda.	Rāmatirtham .	Vizagapatam.

CLASS B—*cont.*

Buddhist Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
B. 17	Half	Spouts and a kalasam discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam.
B. 18	Half	Impression of a seal, discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam.
B. 19	Half	Circular bricks and stones discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam.
B. 20	Full	Iron implements discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam.
B. 21	Half	A heap of iron nails discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam.
B. 22	Half	A crown-shaped bronze ring discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam.
B. 23	Half	Stone Dagōbas discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam.
B. 24	Half	Crystal stone and lead kammal, discovered on the Gurubhakthakonda.	Rāmatīrtham ..	Vizagapatam,
B. 25	Full	South-west view of natural caves and rubble walls, etc., before excavation at Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 26	Full	South view of natural caves and rubble walls, etc., before excavation at Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 27	Full	South-east view of natural caves and rubble walls, etc., before excavation at Durgakonda.	Rāmatīrtham ..	Vizagapatam
B. 28	Full	North-east view of brick stupa on the top of the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 29	Full	South-west view of brick Chaitya, on the top of the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 30	Full	North-east general view of stupa and Chaitya on the top of the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 31	Full .. .	View of rock inscription on (Durga cave), Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 32	Half	A Jain image in two pieces on Durgakonda.	Rāmatīrtham ..	Vizagapatam
B. 33	Full	Ornamental pottery (selected) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 34	Half	Ornamental pottery (selected) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 35	Half	Pottery (selected) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 36	Half	Pottery (selected) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 37	Half	Pilaster discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 38	Full	Stucco ornaments (selected) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 39	Half	Portion of a Naga head of an image, discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 40	Half	Stone ornaments (selected) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B 41	Half	Stone articles (selected) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 42	Half	A copper coin (front) discovered on the Durgakonda.	Rāmatīrtham ..	Vizagapatam.
B. 43	Half	Copper coin (reverse) discovered on the Durgakonda	Rāmatīrtham ..	Vizagapatam.

CLASS C.

Jain Art and Architecture.

Serial number.	Size.	Subject.	Locality.	District.
C. 1	Full	A group of Jain temples	Hampi	Bellary.
C. 2	Full	A Jain image (sitting posture) .. .	Villivakkam ..	Chingleput.
C. 3	Full	A Jain image (do.) .	Bezwada museum ..	Kistna.
C. 4	Full	Rock-cut Jain sculptures in the fort ..	Rayadrug	Bellary.
C. 5	Full	Stone pillar with sculptures on all four sides.	Bezwada	Kistna.
C. 6	Full . ..	Fragments of Jain images discovered near the Sultan's Battery.	Wynaad	Malabar.
C. 7	Full	Foot and armless Jain figure discovered near the Sultan's Battery.	Wynaad	Malabar.
C. 8	Full	Another view of Jain figure discovered near the Sultan's Battery.	Wynaad	Malabar.
C. 9	Full ..	South east view of the Jain temple	Palghat .. .	Malabar
C. 10	Full	Images and Naga stones in the Jain temple.	Palghat	Malabar.
C. 11	Full	The 24 Tirtankaras near the fort ..	Gingee	South Arcot.

CLASS D.

Hindu Art and Architecture.

Serial number.	Size	Subject.	Locality.	District.
D. 1	Full	South view of Kalyana Mandapa, Achutaraya temple.	Hampi	Bellary.
D. 2	Full ..	West view of Nandi Mandapa opposite end of Pampapathi temple.	Hampi	Bellary.
D. 3	Full	West view of double storied Mandapa opposite end of Pampapathi temple.	Hampi	Bellary.
D. 4	Full	East view of Pampapathi temple with old bazaar.	Hampi	Bellary.
D. 5	Full	Monolithic statue of Narasimha	Hampi	Bellary.
D. 6	Full	South-east view of Kadalaikal Ganesha temple.	Hampi	Bellary.
D. 7	Full	Statue of Kadalaikal Ganesha	Hampi	Bellary.
D. 8	Full	East view of main entrance Hazari Rama temple.	Hampi	Bellary.
D. 9	Full	South-west view of Sanctum Hazari Rama temple	Hampi	Bellary.
D. 10	Full	Details from the Amman shrine, Hazari Rama temple.	Hampi	Bellary.
D. 11	Full	Details from the Swami shrine Hazari Rama temple.	Hampi	Bellary.
D. 12	Full	Details representing elephants dancing girls and warriors from the outer wall of the Hazari Rama temple.	Hampi	Bellary.
D. 13	Full	Details of elephants from the outside wall of the Hazari Rama temple.	Hampi	Bellary.
D. 14	Full	Details of warriors, cavalry and elephants of the Hazari Rama temple.	Hampi	Bellary.
D. 15	Full	Details of sculptures of the Hazari Rama temple walls.	Hampi	Bellary.
D. 1	Full .. .	Details representing scenes from the Ramayana, of the Hazari Rama temple.	Hampi	Bellary.
D. 17	Full	Details of Parapet wall of the steps of the throne platform.	Hampi .. :	Bellary.
D. 18	Full	Details of elephants and dancing girls, throne platform.	Hampi	Bellary.
D. 19	Full	Details of horses, hunters and dogs, throne platform.	Hampi	Bellary.
D. 20	Full	Details of elephants, camels and horses, throne platform.	Hampi	Bellary.
D. 21	Full	Details of dancing girls, carved on throne platform	Hampi	Bellary.
D 22	Full	Two-headed bird on a wall of small fort	Kamalapuram ..	Bellary.
D. 23	Full	West view of main gopuram of the Kothandarama temple.	Vontimitta	Cuddapah.
D. 24	Full	North-west view of the Vasanta Mandapa in Kothandarama temple.	Vontimitta	Cuddapah.
D. 25	Full	Back view of the Kothandarama temple..	Vontimitta	Cuddapah.
D. 26	Full	General view of two shrines of Vishnu and Siva temple	Pushpagiri	Cuddapah.
D. 27	Full .. .	Half portion of the right hand shrine of Vishnu temple.	Pushpagiri	Cuddapah.
D. 28	Full	Half portion of the left hand shrine of Vishnu temple.	Pushpagiri	Cuddapah.
D. 29	Full	Half portion of the right hand shrine, Siva temple	Pushpagiri .. .	Cuddapah.
D. 30	Full	Half portion of the left hand shrine, Siva temple	Pushpagiri	Cuddapah
D. 31	Full	Details of sculpture Siva dancing with eight hands and Parvati on outside of the wall in Siva temple.	Pushpagiri	Cuddapah.
D. 32	Full . .	Details of sculpture Siva dancing with four hands on outside of the wall in Siva temple.	Pushpagiri	Cuddapah.
D. 33	Full . .	Details of sculpture Siva dancing with eight hands on outside of the wall in Siva temple	Pushpagiri	Cuddapah.
D. 34	Full	Sculpture of Krishna in Vishnu temple ..	Pushpagiri	Cuddapah.
D. 35	Full .. .	Sculpture of Siva and Arjuna fighting in Siva temple.	Pushpagiri	Cuddapah.
D. 36	Full	Sculpture of Arjuna's penance in Siva temple	Pushpagiri	Cuddapah.
D. 37	Full . .	Sculpture of Bikshandavar in Siva temple.	Pushpagiri	Cuddapah.
D. 38	Full . .	Details of sculpture Siva dancing with four hands in Siva temple.	Pushpagiri	Cuddapah.
D. 39	Full . . .	Sculpture of Arjuna getting Pasupathastram from Siva in Siva temple.	Pushpagiri	Cuddapah.
D. 40	Full	Sculpture of Krishna and Arjuna on outside wall of Vishnu temple.	Pushpagiri	Cuddapah.
D. 41	Full	Details of sculpture from base of the Sanctum, Vishnu temple.	Pushpagiri	Cuddapah.
D. 42	Full	Details of sculpture from base of the Sanctum, Vishnu temple.	Pushpagiri . ..	Cuddapah.

CLASS D—*cont.*

***Hindu Art and Architecture*—cont.**

Serial number.	Size.	Subject.	Locality.	District.
D. 43	Full	Details of sculpture from base of the Sanctum, Vishnu temple.	Pushpagiri	Cuddapah.
D. 44	Full	Details of sculpture from base of the Sanctum, Vishnu temple.	Pushpagiri	Cuddapah.
D. 45	Full	Three rows of sculpture representing warriors in Siva temple and Vishnu temples.	Pushpagiri	Cuddapah.
D. 46	Full	Three rows of sculpture representing the story of Rāmāyana in Vishnu temple.	Pushpagiri	Cuddapah.
D. 47	Full	Sculpture of Somasutra in Parvati shrine in Siva temple.	Pushpagiri	Cuddapah.
D. 48	Full	Bronze images of Subramanya with Valliamman and Devayāni, Thiyāgarāja temple.	Tiruvottiyur ..	Chingleput.
D. 49	Full	Svami and Amman, Thiyāgarāja temple.	Tiruvottiyur ..	Chingleput.
D. 50	Full	Bronze images of Vinayakar in standing posture in Thiyāgarāja temple	Tiruvottiyur ..	Chingleput.
D. 51	Full	White marble stone Vinayakar in sitting posture in Thiyāgarāja temple.	Tiruvottiyur ..	Chingleput.
D. 52	Full	Treasure trove bronze image of Kali ..	Nandimangalam ..	Chingleput.
D. 53	Full	East view of main gateway of Sarangapani temple.	Kumbakōnam ..	Tanjore.
D. 54	Full	Sculptured pillar representing Vaiguntapati in Rama temple.	Kumbakōnam ..	Tanjore.
D. 55	Full	Sculptured pillar representing Krishna and Rukmani in Rama temple.	Kumbakōnam ..	Tanjore.
D. 56	Full	Sculptured pillar representing one of the Rajas of Tanjore with his two daughters in Rama temple.	Kumbakōnam ..	Tanjore.
D. 57	Full	Sculptured pillar representing a female figure in Rama temple.	Kumbakōnam ..	Tanjore.
D. 58	Full	Sculptured pillar representing Krishna and two maidens in Rama temple.	Kumbakōnam ..	Tanjore.
D. 59	Full	Sculptured pillar representing Vamanavathar of Vishnu in Rama temple.	Kumbakōnam ..	Tanjore.
D. 60	Full .. .	Sculpture representing a Raja being weighed in a pair of scales in a mandapa belonging to the Mahamakham tank.	Kumbakōnam ..	Tanjore.
D. 61	Full .. .	View of Aravan and Durga in Draupadi Amman temple.	Kumbakōnam ..	Tanjore.
D. 62	Full	Details of Durga in Draupadi Amman temple.	Kumbakōnam ..	Tanjore.
D. 63	Full	Ardhanarisvara, east side of the Sanctum, Aiyravatesvara temple.	Darasuram	Tanjore.
D. 64	Full	Sculpture of Manmatha and Rathi in a stone car in Aiyravatesvara temple.	Darasuram .. .	Tanjore.
D. 65	Full	Sculpture of Bhikshandavar in Aiyravatesvara temple.	Darasuram	Tanjore.
D. 66	Full	South-west view of Alankara mandapa in Aiyravatesvara temple.	Darasuram	Tanjore.
D. 67	Full	South-east view of Kalyana mandapa in Aiyravatesvara temple.	Darasuram	Tanjore.
D. 68	Full	South-east view of Devanayaki Amman shrine.	Darasuram	Tanjore.
D. 69	Full	Nandi mandapa and Balipitam in front of Aiyravatesvara temple.	Darasuram ..	Tanjore.
D. 70	Full	Sculpture of Virattesvara on the north side of Sanctum, in Aiyravatesvara temple.	Darasuram	Tanjore.
D. 71	Full	Details from the steps in Nalūh mandapa in Aiyravatesvara temple.	Darasuram	Tanjore.
D. 72	Full	East view of main gopuram, Sakthivaréśvara temple.	Sakthimutham ..	Tanjore.
D. 73	Full . ..	Sculptured pillar in front of Sakthivanēsvara temple.	Sakti imutham ..	Tanjore.
D. 74	Full	A portion of a pillared mandapa in Sakthivanēsvara temple.	Sakthimutham ..	Tanjore.
D. 75	Full	Sculpture of Durvasa Mahārishi riding on tiger, Dhenupurēsvara temple.	Pattēsvaram ..	Tanjore.
D. 76	Full	Copper Kāvadi in Siva temple	Tiruvaikavur ..	Tanjore
D. 77	Full	Bhikshandavar in Pasupatēsvara temple	Pandaralur ..	Tanjore.
D. 78	Full	Do. with his attendants, Pasupatēsvara temple.	Pandanallur ..	Tanjore.
D. 79	Full	Siva's attendants, Pasupatēsvara temple.	Pandanallur ..	Tanjore.
D. 80	Full	Sundarēsvara in the posture of riding, Pasupatēsvara temple.	Pandanallur ..	Tanjore.
D. 81	Full	Back view of Sundarēsvara in Pasupatēsvara temple.	Pandanallur ..	Tanjore
D. 82	Half	Māriamman in Siva temple	Tirupaianthal ..	Tanjore
D. 83	Half .. .	Kungilyanāyanār in Siva temple .	Tirupanainthal ..	Tanjore
D. 84	Half	Urdhva Thandava Mūrthy in Siva temple	Tirupananthal ..	Tanjore
D. 85	Full	Treasure trove bronze images	Panchanathikulam.	Tanjore
D. 86	Full	Treasure trove bronze images	Panchanathikulam.	Tanjore
D. 87	Full	Treasure trove bronze images .. .	Panchanathikulam.	Tanjore
D. 88	Full .. .	Treasure trove bronze images	Panchanathikulam	Tanjore.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject	Locality.	District.
D. 89	Full	Treasure trove bronze bull .	Panchanathikulam.	Tanjore.
D. 90	Full ..	Bird's-eye view of Vedaranyasvara temple.	Vedarannyam ..	Tanjore.
D. 91	Full	Main entrance of second courtyard of Vedaranyasvara temple	Vedarannyam	Tanjore
D. 92	Full	North-east view of Vimana over the Garbhagriha of Vedaranyasvara temple.	Vedarannyam ..	Tanjore.
D. 93	Full	Katchikodutha Nayanār in Vedaranyasvara temple	Vedarannyam ..	Tanjore.
D. 94	Full . .	North-east view of Rama's foot-prints in the centre of a mandapa	Kodikadu .. .	Tanjore.
D. 95	Full ..	Kolaga Maharishi in Siva temple ..	Kodikarai	Tanjore.
D 95	Full	Bhikshandavar in Vēērattisvara temple	Valuvur . .	Tanjore.
D. 97	Full . .	Mohanāvathar of Vishnu in Vēērattisvara temple	Valuvur	Tanjore.
D. 98	Full	Front view of Shanmukha image, Pasupathēēsvara temple	Nallur	Tanjore.
D. 99	Full .	Back view of Shanmukha image, Pasupathēēsvara temple	Nallur	Tanjore.
D. 100	Full ..	Front view of Bhikshandavar image, Pasupathēēsvara temple	Nallur	Tanjore.
D 101	Full	Back view of Bhikshandavar image, Pasupathēēsvara temple	Nallur . ..	Tanjore
D. 102	Full .. .	Side view of Bhikshandavar image, Pasupathēēsvara temple	Nallur	Tanjore.
D. 103	Full .. .	East view of main Gōpuram, Thyagaraja temple	Tiruvalur .. .	Tanjore.
D. 104	Full	Details from main Gopuram, Thyagaraja temple.	Tiruvalur . .	Tanjore.
D 105	Full	South-east view of Nēēlayathākshi Amman temple	Negapatam ..	Tanjore.
D 106	Full	Bronze image of Panchamuka Vinayakar, on lion (front view, Nēēlayathākshi Amman temple	Negapatam . ..	Tanjore.
D 107	Full .. .	Back view of bronze image of Panchamuka Vinayakar, on lion Nēēlayathākshi Amman temple	Negapatam .. .	Tanjore.
D 108	Full	Bronze images of Athibakta Nāyanār, Pundarikamaharishi and Sattsvarmaharishi	Negapatam . ..	Tanjore.
D 109	Full .. .	South east general view of Great temple	Tanjore . ..	Tanjore.
D. 110	Full .. .	South-west view of inner Gopuram the Great Temple	Tanjore . .	Tanjore.
D 111	Full .	Details from the Sanctum of the Great Temple	Tanjore ..	Tanjore.
D 112	Full .	Image of Sarasvati on north side of Sanctum, Great Temple	Tanjore . ..	Tanjore
D 113	Full ..	South view of Subramanya shrine, the Great Temple	Tanjore . ..	Tanjore
D 114	Full . ..	Details from the base of Subramanya shrine, the Great Temple	Tanjore . ..	Tanjore.
D 115	Full ..	Door-keeper in Subramanya shrine, the Great Temple	Tanjore ..	Tanjore.
D 116	Full . ..	Image of Dakshinamoorthy in southern niche of Panchanadēsvara temple	Trivadi ..	Tanjore.
D. 117	Full ..	Brahma, on the north side of Panchanadēsvara temple	Trivadi	Tanjore
D 118	Full ..	Three Rajas worshipping Siva in Siva temple	Kamarasavalli ..	Trichinopoly.
D 119	Full .	Bronze images from Siva temple .. .	Kamarasavalli .	Trichinopoly.
D 120	Full .	South-west view of tower of Siva temple	Gangaikonda-shōlapuram	Trichinopoly.
D 121	Full .. .	South-west view of Sanctum of Siva temple	Gangaikonda-shōlapuram	Trichinopoly.
D 122	Full ..	Chemmukēsa Anugrah moorthy on the north side of Sanctum of Siva temple	Gangaikonda-sholapuram.	Trichinopoly
D 123	Full	Vinayakar in the south side of Sanctum of Siva temple	Gangaikonda shōlapuram	Trichinopoly.
D 124	Full . .	Mahishasuramardhani inside the Siva temple	Gangaikonda-shōlapuram	Trichinopoly.
D. 125	Full .	General view of large figures of horse and elephant in Ayyanar temple.	Ramnad	Ramnad.
D 126	Full	View of horse in Ayyana temple .	Ramnad . ..	Ramnad.
D. 127	Full	View of elephant in Ayyanar temple	Ramnad ..	Ramnad
D 128	Full . ..	South view of Gangadhara temple on Bugada hill.	Kottakolla ..	Ganjam.
D 129	Full . .	North-east view of tower of Gangadhara temple on Bugada hill	Kottakolla ..	Ganjam
D 130	Full ..	South east view of tower of Gangadhara temple on Bugada hill	Kottakolla	Ganjam.
D 131	Full . .	South east view of Jagannatha temple on Bugada hill	Kottakolla .. .	Ganjam
D 132	Full	Details from Tower of Jagannatha temple on Bugada hill	Kottakolla	Ganjam.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District
D 133	Full	Details of Karthikesvara on the south side of Bugada hill.	Kattakol	Ganjam.
D. 134	Full	South-west general view of Karthikesvara temple on Bugada hill.	Bugada	Ganjam.
D. 135	Full	South-west view of Karthikesvara temple on Bugada hill.	Bugada	Ganjam.
D. 136	Full	Marble Statue of Siva (sitting posture).	Bezwada Museum ..	Kistna.
D. 137	Full	Marble bust of Siva	Bezwada Museum ..	Kistna.
D 138	Full	Image of Kubera	Bezwada Museum ..	Kistna.
D. 139	Full	General view of cave temple	Undavalli	Kistna.
D. 140	Half	Naga Pillar in Kalyanamandapa in the temple.	Simhachallam ..	Vizagapatam.
D. 141	Half	North view of the sanctum	Simhachallam ..	Vizagapatam.
D. 142	Half	North view of the Bhōgamandapa ..	Simhachallam ..	Vizagapatam.
D. 143	Half	View of gateway with remains of fortification.	Simhachallam ..	Vizagapatam.
D. 144	Full .. .	Sculptures lying outside the museum ..	Bezwada	Kistna.
D. 145	Full	Four storied Cave temple	Undavalli	Kistna.
D. 146	Full	Eastern view of the Gōpuram base in the Rama temple.	Tadpatri	Anantapur.
D. 147	Full	North-east view of Malesvara temple ..	Konakondla	Anantapur.
D. 148	Half	Wood carvings of Svamis	Tadpatri	Anantapur.
D. 149	Half	Wood carvings of Svamis	Tadpatri	Anantapur.
D. 150	Half	Wood carvings of Svamis	Tadpatri	Anantapur.
D. 151	Half	Wood carvings of Svamis	Tadpatri	Anantapur.
D. 152	Half	Wood carvings of Svamis	Tadpatri	Anantapur.
D. 153	Half	Wood carvings of Svamis	Tadpatri	Anantapur.
D. 154	Full	Stone swing	Kalyandrug	Anantapur.
D. 155	Full	North-east view of large Siva temple ..	Kambadura	Anantapur.
D. 156	Full	South view of parapet of front mandapa, large Siva temple.	Kambadura	Anantapur.
D. 157	Full	East view of Parvati, of large Siva temple	Kambadura	Anantapur.
D. 158	Full	North-east view of Lakshmi shrine, Chintalaraya temple.	Tadpatri	Anantapur.
D. 159	Full	View of south entrance of Lakshmi shrine, Chintalaraya temple.	Tadpatri	Anantapur.
D. 160	Full	Pillar from south entrance of Lakshmi shrine, Chintalaraya temple.	Tadpatri	Anantapur.
D. 161	Full	Details from north gateway, Rama temple	Tadpatri	Anantapur.
D. 162	Full .. .	Details of sculptures, Rama temple ..	Tadpatri	Anantapur.
D. 163	Full	Details of sculptures, Rama temple ..	Tadpatri	Anantapur.
D. 164	Full	Details from south gateway, Rama temple	Tadpatri .. .	Anantapur.
D. 165	Full . ..	Details of sculptures, Rama temple ..	Tadpatri	Anantapur.
D. 166	Full	South-west view of Vishnu temple ..	Penukonda	Anantapur.
D. 167	Full	View of stamba of Vishnu temple ..	Penukonda	Anantapur.
D. 168	Full	Capital of stamba	Penukonda	Anantapur.
D. 169	Full	Base of stamba	Penukonda	Anantapur.
D. 170	Full .. .	Details of sculptures on exterior of south wall, Vishnu temple	Penukonda	Anantapur.
D. 171	Full	Details of sculptures on exterior of south wall, Vishnu temple.	Penukonda	Anantapur.
D. 172	Full	Details of sculptures on exterior of south wall, Vishnu temple.	Penukonda	Anantapur
D. 173	Full	Details of sculptures on exterior of south wall, Vishnu temple.	Penukonda	Anantapur.
D. 174	Full	Details of sculptures on exterior of west wall, Vishnu temple	Penukonda	Anantapur.
D. 175	Full	Details of sculptures on exterior of west wall, Vishnu temple.	Penukonda	Anantapur.
D. 176	Full	Niches in south wall, Vishnu temple ..	Penukonda	Anantapur.
D. 177	Full	Niches in south wall, Vishnu temple ..	Penukonda	Anantapur.
D. 178	Full	South-west view of Siva temple	Penukonda	Anantapur.
D. 179	Full .. .	Niches in south wall, Siva temple. ..	Penukonda	Anantapur.
D. 180	Full	Niches in south wall, Siva temple.. ..	Penukonda	Anantapur.
D. 181	Full	Pillar from a Mandapa west of Vishnu temple.	Penukonda	Anantapur.
D. 182	Full	Pillar from a Mandapa west of Vishnu temple.	Penukonda	Anantapur.
D. 183	Full	View of stamba in front of Sub-Collector's office.	Penukonda	Anantapur.
D. 184	Full	Entrance to Mahamandapa, Vishnu temple	Gorantla	Anantapur.
D. 185	Full	Pillar from Mahamandapa, Vishnu temple	Gorantla	Anantapur.
D. 186	Full .. .	Lion pillar on east side of Mahamandapa, Vishnu temple.	Gorantla	Anantapur.
D. 187	Full	Pillar at the east entrance to mahamandapa, Virabhadra temple.	Lēpakshi	Anantapur.
D. 188	Full	Pillar from Kalyanamandapa, Virabhadra temple.	Lēpakshi	Anantapur.
D. 189	Full	Pillar from Kalyanamandapa, Virabhadra temple.	Lēpakshi . ..	Anantapur.
D. 190	Full	Pillar from Kalyanamandapa, Virabhadra temple.	Lēpakshi .. .	Anantapur.
D. 191	Full	Pillar from Kalyanamandapa, Virabhadra temple.	Lēpakshi . ..	Anantapur.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 192	Full	Pillar from Kalyanamandapa, Virabhadra temple.	Lepakshi	Anantapur.
D. 193	Full	Pillar from Kalyanamandapa, Virabhadra temple.	Lepakshi	Anantapur.
D. 194	Full	Pillar from Kalyanamandapa, Virabhadra temple.	Lepakshi	Anantapur.
D. 195	Full	Details from north main entrance Virabhadra temple.	Lepakshi	Anantapur.
D. 196	Full	Pillars from first courtyard on east side of Virabhadra temple.	Lepakshi	Anantapur.
D. 197	Full	South view of Monolithic bull	Lepakshi	Anantapur.
D. 198	Full	Details from Monolithic bull	Lepakshi	Anantapur.
D. 199	Full	North-west view of stamba in front of Chinnakesava temple.	Chippagiri	Bellary.
D. 200	Full	East view of main gateway, Pattabirama temple.	Hampi	Bellary.
D. 201	Full	South-east view of main shrine, Pattabirama temple.	Hampi	Bellary.
D. 202	Full	View of aqueduct	Hampi	Bellary.
D. 203	Full	View of stone trough	Hampi	Bellary.
D. 204	Full	North view of palace basement near underground shrine.	Hampi .. .	Bellary.
D. 205	Full	Large stone door	Hampi	Bellary.
D. 206	Full	South-west view of Hazari Rama temple.	Hampi	Bellary.
D. 207	Full	Blackstone polished pillar in Mahamandapa, Hazari Rama temple.	Hampi	Bellary.
D. 208	Full	Ornamental parapet wall above the front cornice Hazari Rama temple.	Hampi	Bellary.
D. 209	Full .. .	View of underground shrine chamber ..	Hampi	Bellary.
D. 210	Full .. .	South-east view of stone car, Vittalaraya temple.	Hampi	Bellary.
D. 211	Full	South view of a pillar in front mandapa Vittalaraya temple.	Hampi .. .	Bellary.
D. 212	Full .. .	South-east view of Kalyanamandapa, Vittalaraya temple.	Hampi	Bellary.
D. 213	Full	View of ruined verandah basement, Vittalaraya temple.	Hampi	Bellary.
D. 214	Full	Interior view of front mandapa, Vittalaraya temple.	Hampi	Bellary.
D. 215	Full .. .	East view of old Vishnu temple to the west of Vittalaraya temple.	Hampi	Bellary.
D. 216	Full	Unfinished gateway, south-west of Vittalaraya temple.	Hampi	Bellary.
D. 217	Full	King's balance near Vittalaraya temple.	Hampi .. .	Bellary.
D. 218	Full	South view of second court gateway, Achyutaraya temple.	Hampi . ..	Bellary.
D. 219	Full .. .	North view of Soolai bazaar in front of Achyutaraya temple.	Hampi .. .	Bellary.
D. 220	Full	South-east view of Kalyanamandapa, Achyutaraya temple.	Hampi .. .	Bellary.
D. 221	Full .. .	South-west view of Vasantamandapa, Achyutaraya temple.	Hampi	Bellary.
D. 222	Full	View of verandahs in second courtyard, Achyutaraya temple.	Hampi	Bellary.
D. 223	Full	Details from a base of west verandah in second courtyard, Achyutaraya temple.	Hampi	Bellary
D. 224	Full	South-east view of tank in front of Achyutaraya temple.	Hampi	Bellary.
D. 225	Full	Portion of Soolai mandapa in front of Achyutaraya temple.	Hampi	Bellary.
D. 226	Full .. .	South-west view of Bhimesvara temple ..	Nilagunda .. .	Bellary.
D. 227	Full	Details from tower on south side of Bhimesvara temple.	Nilagunda	Bellary.
D. 228	Full .. .	Image of Sarasvati from Kallesvara temple	Bagali .. .	Bellary.
D. 229	Full .. .	Image of Shanmukha from Kallesvara temple.	Bagali .. .	Bellary.
D. 230	Full	Image of Parvati from Kallesvara temple.	Bagali .. .	Bellary.
D 231	Full	Image of Siva and Parvati, Kallesvara temple.	Bagali .. .	Bellary.
D. 232	Full	Image of Vishnu from Krishna temple ..	Huvinahadagalli ..	Bellary.
D. 233	Full .. .	General view of entrance to large well from the east.	Tambarahalli .	Bellary.
D. 234	Full	General view of entrance to large well from the north-west.	Tambarahalli .	Bellary.
D. 235	Full	Circular archway in entrance to large well from the west.	Tambarahalli ..	Bellary.
D. 236	Full	General view of the interior of well.	Tambarahalli .	Bellary.
D. 237	Full	Pointed archway over the well passage from the east.	Tambarahalli .	Bellary.
D. 238	Full ..	Carved Naga-panel in entrance to the well.	Tambarahalli .	Bellary.
D. 239	Full .. .	Carved stone Linga outside Fort.	Rayadrug	Bellary.
D. 240	Half ..	General view of the demolished temple.	Padiyur .. .	Coimbatore.

CLASS D—cont.

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 241	Half	South-east view of the tower and mandapa of Sugrivesvara temple.	Periyapalayam ..	Coimbatore.
D. 242	Half	North east view of the tower and mandapa of Sugrivesvara temple.	Periyapalayam ..	Coimbatore.
D. 243	Half	General view of the interior of the temple with two bulls and mandapa.	Periyapalayam ..	Coimbatore.
D. 244	Half	Sculptures above the doorway of the Ardhamandapa with two bulls and mandapa.	Periyapalayam ..	Coimbatore.
D. 245	Full	Vessels relating to treasure trove ..	Melakondattil ..	Malabar.
D. 246	Full	Lamps relating to treasure trove ..	Melakondattil ..	Malabar.
D. 247	Full	South-east view of the Srinivasaperumal temple.	Tirupati	Chittoor.
D. 248	Full	Wood carvings removed from old car ..	Tirupati	Chittoor.
D. 249	Full	Wood carvings removed from old car ..	Tirupati	Chittoor.
D. 250	Full	Wood carvings removed from old car ..	Tirupati	Chittoor.
D. 251	Full	Wood carvings removed from old car ..	Tirupati .. .	Chittoor.
D. 252	Full ..	Wood carvings removed from old car ..	Tirupati . ..	Chittoor.
D. 253	Full	Wood carvings removed from old car ..	Tirupati	Chittoor.
D. 254	Full	Wood carvings removed from old car ..	Tirupati	Chittoor.
D. 255	Full	View of gateway and stamba in Kailasanatha temple.	Taramangalam ..	Salem.
D. 256	Full	Sculptures including a female holding a bow in Tirukulam.	Taramangalam ..	Salem.
D. 257	Full	Stone pillar brackets in Kailasanatha temple.	Taramangalam ..	Salem.
D. 258	Full	Ganga Visarjanam in Kailasanatha temple.	Taramangalam ..	Salem.
D. 259	Full	Siva dancing in Kailasanatha temple ..	Taramangalam ..	Salem.
D. 260	Full	Lingôbhavar in Kailasanatha temple ..	Taramangalam ..	Salem.
D. 261	Full	Kalyanamandapa in the temple . ..	Ayodyapatnam ..	Salem.
D. 262	Full	Pillar with horse brackets, etc	Ayodyapatnam ..	Salem.
D. 263	Full .. .	Naga stones, etc., outside the temple (on the south east).	Ayodyapatnam ..	Salem.
D. 264	Full	Nalvar in Kailasanatha temple	Tiruchengodu ..	Salem.
D. 265	Full	Naga figures	Tiruchengodu ..	Salem.
D. 266	Full	Pillars with Yali brackets in Nrittamandapa on the hill.	Tiruchengodu ..	Salem.
D. 267	Full	View of ornamental ceiling and wooden Vimana on the hill.	Tiruchengodu ..	Salem.
D. 268	Full	Idol of Arthanarisvara on the hill ..	Tiruchengodu ..	Salem.
D. 269	Half	South east view of the tower of Siva Temple.	Atur	Salem.
D. 270	Full	Sculpture of Durga's conflict with Mahishasura lying in the village	Nedumaram	Chingleput.
D. 271	Full	Sculptures lying in the village	Nedumaram	Chingleput.
D. 272	Full	West view of shore temple	Mamallapuram ..	Chingleput.
D. 273	Full	North-west view of shore temple	Mamallapuram ..	Chingleput.
D. 274	Full	A portion of the Five Rathas . ..	Mamallapuram ..	Chingleput.
D. 275	Full	A portion of the Five Rathas . ..	Mamallapuram ..	Chingleput.
D. 276	Full	Amman shrine in Thirupuranthakesvara temple.	Kuvam	Chingleput.
D 277	Full	Swami shrine in Thirupuranthakesvara temple.	Kuvam	Chingleput.
D. 278	Full	Vishnu with his two concerts	Namasivayapuram ..	South Arcot
D. 279	Full	Krishna and a tripod	Namasivayapuram ..	South Arcot.
D. 280	Full	Paramesvara relating to treasure trove ..	Vadrangam . ..	Tanjore.
D. 281	Half	North-west view of the sanctum of the temple.	Tiruvadamarudur ..	Tanjore.
D. 282	Half	South-east view of the sanctum of the temple.	Tiruvadamarudur ..	Tanjore.
D. 283	Half	South east view of the sanctum of the temple.	Tiruvadamarudur ..	Tanjore.
D. 284	Half	North view of the Vimana over the Mukambal Amman shrine.	Tiruvadamarudur ..	Tanjore.
D. 285	Half	South-west view of the Vimana over the Mukambal Amman shrine	Tiruvadamarudur ..	Tanjore.
D. 286	Half	General view of Suryanarayana temple ..	Suryanarkovil ..	Tanjore.
D. 287	Half	Planet "Sun" in Suryanarayana Temple.	Suryanarkovil ..	Tanjore.
D. 288	Half	Planets, Rahu, Sukra, Ketu, Chandra, Angaraka, Budha, Sani and Guru.	Suryanarkovil ..	Tanjore.
D. 289	Half	Eastern view of the front gopura, Mayuranatha temple.	Mayavaram	Tanjore.
D. 290	Half	Western view of the front gopura, Mayuranatha temple.	Mayavaram	Tanjore.
D. 291	Full	A figure of the Amman in the shape of Peacock worshipping the Linga, Mayuranatha temple	Mayavaram	Tanjore.
D. 292	Half	Sanctum tower, Mayuranatha temple ..	Mayavaram .. .	Tanjore.
D. 293	Half	South-east view of central shrine, Mayuranatha temple.	Mayavaram .. .	Tanjore.
D. 294	Half	North-west view of central shrine, Mayuranatha temple.	Mayavaram . ..	Tanjore.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 295	Half	View of Central shrine, Mayuranatha temple	Mayavaram	Tanjore.
D. 296	Half . ..	Eastern view of outer gateway of Kampaharesvara temple	Tribhuvanam ..	Tanjore.
D. 297	Half	Western view of outer gateway of Kampaharesvara Temple	Tribhuvanam ..	Tanjore.
D. 298	Half . ..	Eastern view of the inner gateway of Kampaharesvara Temple.	Tribhuvanam ..	Tanjore
D. 299	Half . ..	Eastern view of the western gopura ..	Tribhuvanam .	Tanjore.
D. 300	Half	South-east view of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore.
D. 301	Half ..	North-west view of the Vimana over the central shrine	Tribhuvanam ..	Tanjore.
D. 302	Half .. .	View of sculptured base of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore.
D 303	Half . ..	View of sculptured base of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore.
D. 304	Half .. .	View of sculptured base of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore
D. 305	Half	View of sculptured base of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore
D. 306	Half	View of sculptured base of the Vimana over the central shrine	Tribhuvanam .	Tanjore
D. 307	Half .	Sarapar, Kampaharesvara temple	Tribhuvanam	Tanjore
D 308	Half . ..	Female doorkeeper, Kampaharesvara temple.	Tribhuvanam ..	Tanjore.
D 309	Half ..	Female doorkeeper, Kampaharesvara temple	Tribhuvanam ..	Tanjore
D 310	Half .. .	South east view of the Vimana of the temple	Tirupalaturai .	Tanjore.
D 311	Half . .	Granary in the temple	Tirupalaturai .	Tanjore
D. 312	Half ..	Sculptures in Siva temple .. .	Tirupalaturai .	Tanjore
D. 313	Half .	Image of Chandrasekara .	Tirupalaturai	Tanjore
D. 314	Half . ..	Image of Subramanya . .	Tirupalaturai	Tanjore.
D. 315	Half	Image of Pidari . .	Tirupalaturai ..	Tanjore.
D 316	Half	Image of Ayyanar . .	Tirupalaturai	Tanjore.
D. 317	Full . .	Water-basin in Brahdesvara Temple	Tanjore . .	Tanjore
D 318	Full .	Saptakanni Medu . ..	Tanjore . ..	Tanjore
D 319	Full	Image of Ayyanar on Elephant	Valuvur	Tanjore.
D. 320	Full .	Image of Mohanavatar ..	Valuvur	Tanjore
D 321	Full	Image of Parvati with Subramanya in arms	Valuvur ..	Tanjore
D. 322	Full .. .	Image of Bikshandavar .	Valuvur	Tanjore.
D. 323	Full ..	Image of Viratesvara . .	Valuvur ..	Tanjore.
D. 324	Full ..	Image of Adhikaranandi . .	Valuvur .. .	Tanjore.
D. 325	Full ..	Treasure trove images .	Marudanttanallur ..	Tanjore
D 326	Full .. .	Treasure trove images ..	Marudanttanallur .	Tanjore
D. 327	Full .. .	Treasure trove images ..	Marudanttanallur ..	Tanjore
D 328	Full	General view of the temple with the tank in front	Nallur ..	Tanjore.
D 329	Full .. .	North-east view of Svami's Shrine	Nallur .	Tanjore
D. 330	Full ..	South-east view of Svami's Shrine	Nallur . ..	Tanjore.
D 331	Full ..	North-east view of granary within the temple	Nallur	Tanjore.
D. 332	Full .	Sculptured Vallabha Vignesvara	Nallur	Tanjore
D. 333	Full .. .	Image of Nataraja with eight hands, front and back view.	Nallur .. .	Tanjore.
D 334	Full .	Sundaramurti with Nachiyar and Agasthiyar	Nallur	Tanjore.
D. 335	Full .. .	Sculpture of Kunti worshipping the Linga	Nallur	Tanjore.
D. 336	Full ..	South west view of Achalesvara shrine Tyagaraja temple	Tiruvalur	Tanjore.
D. 337	Full .. .	Cow and dead calf, Tyagaraja temple ..	Tiruvalur	Tanjore.
D 338	Full ..	South east view of Svami shrine in the temple.	Tirupalaturai ..	Tanjore.
D 339	Full .	Sculptured ceiling in front of the Subramanya temple	Tirupalaturai ..	Tanjore.
D 340	Full ..	Ruined mandapa outside the temple	Tirupalaturai .	Tanjore
D 341	Full	North-west view of Svami shrine	Kovilur	Tanjore
D. 342	Quarter ..	North-west view of Svami shrine	Kovilur . ..	Tanjore.
D 343	Quarter	South-west view of Svami shrine	Kovilur .	Tanjore
D 344	Quarter .	Image of Sundaramurti with Nachiyar ..	Kovilur	Tanjore.
D. 345	Full ..	South-east view of the Svami Shrine	Tribhuvanam ..	Tanjore.
D 346	Full .. .	East view of the Svami shrine	Tribhuvanam ..	Tanjore.
D 347	Full	North-east view of the Vimana	Tribhuvanam .	Tanjore
D 348	Full .. .	South-west view of ruined mandapa in front of the Amman shrine.	Mayavaram	Tanjore.
D 349	Full	North-west view of the main gate way	Tiruchenkattangudi	Tanjore.
D. 350	Full ..	South-east view of the main gate way	Tiruchenkattangudi.	Tanjore.
D. 351	Full .. .	North-west view of the Amman shrine .	Tiruchenkattangudi	Tanjore.
D 352	Full .. .	South-west view of Svami's shrine	Tiruchenkattangudi.	Tanjore.
D 353	Full .. .	North-east view of Svami's shrine ..	Tiruchenkattangudi.	Tanjore.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 354	Half	Image of Siruthondar with family Kadavarkōne King, etc.	Tiruchenkattangudi.	Tanjore.
D. 355	Half	Sculpture of Naramukha Vignēsvara ..	Tiruchenkattangudi.	Tanjore.
D. 356	Half	Sculpture of Ardhanārisvara	Tiruchenkattangudi.	Tanjore.
D. 357	Half	Sculpture of Siva dancing	Tiruchenkattangudi.	Tanjore.
D. 358	Half	Sculpture of Darukavana Bhiksāndavar .	Tiruchenkattangudi.	Tanjore.
D. 359	Half .. .	Sculpture of Bhiksāndavar	Tiruchenkattangudi.	Tanjore.
D. 360	Half	Sculpture of Siva dancing	Tiruchenkattangudi.	Tanjore.
D. 361	Half	Sculpture of Siva dancing	Tiruchenkattangudi.	Tanjore.
D 362	Half	Sculpture of Viratēsvara	Tiruchenkattangudi.	Tanjore.
D. 363	Half	Sculptures from the stone car .. .	Tiruvalūr	Tanjore.
D. 364	Half	Sculptures from the stone car	Tiruvalūr	Tanjore.
D. 365	Full	Sculptured shepherd in Minakshi temple.	Madura	Madura.
D. 366	Full	General view of Sundararājaperumal temple.	Tadikombu	Madura.
D. 367	Full	Image of Chakkarattalvar, reverse and back, Sundararājaperumal temple.	Tadikombu	Madura.
D. 368	Full	Metal images reverse and back, Sundararājaperumal temple.	Tadikombu	Madura.
D. 369	Full	Sculpture of Garuda and Chakra ..	Tadikombu	Madura.
D. 370	Full	Sculpture of Narasimha.	Tadikombu . ..	Madura.
D. 371	Full	South side of the sanctum of Amman shrine.	Tadikombu	Madura.
D. 372	Full	Rayagopuram showing the encroachment of houses.	Madura . ..	Madura.
D. 373	Full	Pudu mandapa in front of the temple	Madura	Madura.
D. 374	Full	Interior view of the Mandapa in the temple	Alagarkōil	Madura.
D. 375	Full	North-west view of southern gateway showing the ruins of the Fort wall in the temple.	Alagarkōil	Madura.
D. 376	Full	North view of granary	Alagarkōil	Madura.
D. 377	Full	North view of the temple including the palace, etc.	Uttarakosamangai ..	Rāmnād.
D. 378	Half	Two eastern gateways	Uttarakosamangai ..	Rāmnād.
D. 379	Half	Four stone pillars on the west of the temple.	Uttarakosamangai ..	Rāmnād.
D. 380	Half	Mandapa of Nataraja	Uttarakosamangai ..	Rāmnād.
D. 381	Half	North-east view of stone car ..	Uttarakosamangai ..	Rāmnād.
D. 382	Half .. .	Large figures of horse and elephant in Ayyanār temple.	Rāmnād	Rāmnād.
D 383	Full . ..	Image of Hanuman delivering two lingas to Rama.	Rāmesvaram ..	Rāmnād.
D. 384	Full	Vessels relating to treasure trove case ..	Patharakudi	Rāmnād.
D. 385	Full	Two Images of Siva	Patharakudi	Rāmnād.
D. 386	Full	Thirteen Images relating to treasure trove case	Patharakudi	Rāmnād.
D. 387	Full	North-east view of the Svami's Vimana ..	Rāmesvaram	Rāmnād.
D. 388	Full ..	Image of Nataraja	Rāmesvaram	Rāmnād.
D. 389	Full	Carvings of Svamis	Tirukuttalam ..	Tinnevelly.
D. 390	Full	Birds-eye view of the temple	Kuttalam	Tinnevelly
D. 391	Full	Dvarapalas of the temple	Kuttalam	Tinnevelly.
D. 392	Full	Eastern view of gateway of Visvanatha temple.	Tenkāsi	Tinnevelly.
D. 393	Full	Western view of gateway of Visvanatha temple.	Tenkāsi . ..	Tinnevelly.
D. 394	Full	Sculpture of Siva dancing, Visvanatha temple.	Tenkāsi	Tinnevelly.
D. 395	Full	Kangalanāthar of Visvanātha temple ..	Tenkāsi	Tinnevelly.
D. 396	Half . ..	Sculpture of Vinayagar with eleven hands of Visvanatha temple.	Tenkāsi . ..	Tinnevelly.
D. 397	Full .. .	Tower of the temple	Mannarkovil ..	Tinnevelly.
D. 398	Full	North-west view of tower and inner Court wall in Bhaktavatsalar temple.	Shermadēvi	Tinnevelly.
D. 399	Full	North view of the sanctum and Ardhamandapa, in Bhaktavatsalar temple.	Shermadēvi	Tinnevelly.
D. 400	Half	West view of sanctum wall, in Bhaktavatsalar temple.	Shermadēvi	Tinnevelly.
D. 401	Half	Inner view of the northern outer wall, in Bhaktavatsalar temple.	Shermadēvi	Tinnevelly
D. 402	Full	Outer view of southern outer wall in Bhaktavatsalar temple.	Shermadēvi . ..	Tinnevelly.
D. 403	Full	Unfinished gopuram in Bhaktavatsalar temple	Shermadēvi	Tinnevelly.
D. 404	Full	Images in Rama temple.	Shermadēvi	Tinnevelly.
D. 405	Full	Images in Rama temple . .	Shermadēvi	Tinnevelly.
D. 406	Full	Images in Rama temple	Shermadēvi	Tinnevelly.
D. 407	Full	Images in Rama temple	Shermadēvi ..	Tinnevelly.
D. 408	Full ..	North-west view of Ujjivanatha temple .	Uyyakondan Tirumalai.	Trichinopoly.
D. 409	Full . ..	North-east view of Kartar Mandapa in Jambukēsvara temple.	Tiruvanaikaval ..	Trichinopoly.
D. 410	Full	Sculpture of Ekapādamūrti in Jambukēsvara temple.	Tiruvanaikaval ..	Trichinopoly.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 295	Half	View of Central shrine, Mayuranatha temple	Mayavaram	Tanjore.
D. 296	Half	Eastern view of outer gateway of Kampaharesvara temple.	Tribhuvanam ..	Tanjore.
D. 297	Half	Western view of outer gateway of Kampaharesvara Temple	Tribhuvanam ..	Tanjore.
D. 298	Half . ..	Eastern view of the inner gateway of Kampaharesvara Temple.	Tribhuvanam ..	Tanjore.
D. 299	Half	Eastern view of the western gopura ..	Tribhuvanam ..	Tanjore.
D. 300	Half	South-east view of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore.
D. 301	Half	North-west view of the Vimana over the central shrine	Tribhuvanam ..	Tanjore
D. 302	Half . ..	View of sculptured base of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore.
D 303	Half	View of sculptured base of the Vimana over the central shrine	Tribhuvanam ..	Tanjore.
D. 304	Half .. .	View of sculptured base of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore.
D. 305	Half	View of sculptured base of the Vimana over the central shrine.	Tribhuvanam ..	Tanjore.
D. 306	Half	View of sculptured base of the Vimana over the central shrine	Tribhuvanam	Tanjore
D. 307	Half ..	Sarapar, Kampaharesvara temple	Tribhuvanam	Tanjore
D. 308	Half . ..	Female doorkeeper, Kampaharesvara temple.	Tribhuvanam ..	Tanjore.
D 309	Half . ..	Female doorkeeper, Kampaharesvara temple.	Tribhuvanam ..	Tanjore.
D 310	Half	South east view of the Vimana of the temple	Tirupalaturai	Tanjore.
D 311	Half .. .	Granary in the temple .	Tirupalaturai .	Tanjore.
D. 312	Half .. .	Sculptures in Siva temple . .	Tirupalaturai .	Tanjore
D. 313	Half ..	Image of Chandrasekara ..	Tirupalaturai	Tanjore.
D. 314	Half . ..	Image of Subramanya .	Tirupalaturai	Tanjore.
D. 315	Half	Image of Pidari	Tirupalaturai ..	Tanjore.
D 316	Half ..	Image of Ayyanar . . .	Tirupalaturai	Tanjore.
D. 317	Full	Water-basin in Brahdesvara Temple .	Tanjore .	Tanjore.
D. 318	Full	Saptakanni Medu . ..	Tanjore . ..	Tanjore
D 319	Full	Image of Ayyanar on Elephant	Valuvur .. .	Tanjore.
D. 320	Full . ..	Image of Mohanavatar ..	Valuvur	Tanjore.
D 321	Full	Image of Parvati with Subramanya in arms	Valuvur	Tanjore
D. 322	Full	Image of Bikshandavar .	Valuvur	Tanjore
D. 323	Full ..	Image of Viratesvara . .	Valuvur .. .	Tanjore.
D. 324	Full .. .	Image of Adhikaranandi .. .	Valuvur	Tanjore.
D. 325	Full . .	Treasure trove images	Marudanttanallur ..	Tanjore
D. 326	Full .. .	Treasure trove images . ..	Marudanttanallur ..	Tanjore
D. 327	Full	Treasure trove images ..	Marudanttanallur ..	Tanjore
D 328	Full	General view of the temple with the tank in front	Nallur	Tanjore.
D 329	Full	North-east view of Svami's Shrine	Nallur	Tanjore
D 330	Full ..	South-east view of Svami's Shrine	Nallur .	Tanjore.
D 331	Full	North-east view of granary within the temple	Nallur	Tanjore.
D. 332	Full . .	Sculptured Vallabha Vignesvara	Nallur	Tanjore
D. 333	Full	Image of Nataraja with eight hands, front and back view.	Nallur .. .	Tanjore.
D. 334	Full ..	Sundaramurti with Nachiyar and Agasthiyar	Nallur . ..	Tanjore
D. 335	Full . .	Sculpture of Kunti worshipping the Linga	Nallur	Tanjore.
D 336	Full	South west view of Achalesvara shrine, Tyagaraja temple	Tiruvalur	Tanjore.
D. 337	Full	Cow and dead calf, Tyagaraja temple ..	Tiruvalur	Tanjore
D 338	Full ..	South east view of Svami shrine in the temple.	Tirupalaturai ..	Tanjore.
D 339	Full . .	Sculptured ceiling in front of the Subramanya temple.	Tirupalaturai ..	Tanjore
D 340	Full .. .	Ruined mandapa outside the temple ..	Tirupalaturai	Tanjore.
D. 341	Full	North-west view of Svami shrine .	Kovilur . .	Tanjore
D. 342	Quarter ..	North-west view of Svami shrine .	Kovilur	Tanjore.
D 343	Quarter	South-west view of Svami shrine	Kovilur .. .	Tanjore
D 344	Quarter ..	Image of Sundaramurti with Nachiyar ..	Kovilur	Tanjore.
D 345	Full . .	South-east view of the Svami Shrine	Tribhuvanam ..	Tanjore
D 346	Full .. .	East view of the Svami shrine . .	Tribhuvanam ..	Tanjore
D. 347	Full ..	North-east view of the Vimana .. .	Tribhuvanam ..	Tanjore.
D 348	Full .. .	South-west view of ruined mandapa in front of the Amman shrine	Mayavaram	Tanjore.
D 349	Full	North-west view of the main gate way .	Tiruchenkattangudi	Tanjore.
D. 350	Full ..	South-east view of the main gate way	Tiruchenkattangudi	Tanjore.
D 351	Full .	North west view of the Amman shrine .	Tiruchenkattangudi.	Tanjore.
D 352	Full .. .	South-west view of Svami's shrine	Tiruchenkattangudi.	Tanjore.
D 353	Full	North-east view of Svami's shrine .	Tiruchenkattangudi	Tanjore.

CLASS I—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 354	Half	Image of Siruthondar with family Kadavarkone King, etc.	Tiruchenkattangudi.	Tanjore.
D. 355	Half	Sculpture of Naramukha Vignesvara ..	Tiruchenkattangudi.	Tanjore
D. 356	Half	Sculpture of Ardhanarisvara	Tiruchenkattangudi.	Tanjore.
D. 357	Half	Sculpture of Siva dancing	Tiruchenkattangudi.	Tanjore.
D. 358	Half	Sculpture of Darukavana Bhiksandavar .	Tiruchenkattangudi.	Tanjore.
D. 359	Half .. .	Sculpture of Bhikshandavar	Tiruchenkattangudi.	Tanjore.
D. 360	Half	Sculpture of Siva dancing	Tiruchenkattangudi.	Tanjore.
D. 361	Half	Sculpture of Siva dancing	Tiruchenkattangudi.	Tanjore.
D 362	Half	Sculpture of Viratesvara	Tiruchenkattangudi.	Tanjore.
D. 363	Half	Sculptures from the stone car .. .	Tiruvalur	Tanjore.
D. 364	Half	Sculptures from the stone car	Tiruvalur	Tanjore.
D. 365	Full	Sculptured shepherei in Minakshi temple.	Madura	Madura.
D. 366	Full	General view of Sundararajaperumal temple.	Tadikombu	Madura.
D. 367	Full	Image of Chakkarattalvar, reverse and back, Sundararajaperumal temple.	Tadikombu	Madura.
D. 368	Full	Metal images reverse and back, Sundararajaperumal temple.	Tadikombu	Madura.
D. 369	Full	Sculpture of Garuda and Chakra ..	Tadikombu ..	Madura.
D. 370	Full	Sculptu e of Narasimha. ..	Tadikombu	Madura.
D. 371	Full	South side of the sanctum of Amman shrine.	Tadikombu	Madura.
D. 372	Full	Rayagopuram showing the encroachment of houses.	Madura . ..	Madura.
D. 373	Full	Pudu mandapa in front of the temple .	Madura	Madura.
D. 374	Full	Interior view of the Mandapa in the temple	Alagarkoil	Madura.
D. 375	Full	North-west view of southern gateway showing the ruins of the Fort wall in the temple.	Alagarkoil	Madura.
D. 376	Full	North view of granary	Alagarkoil	Madura.
D. 377	Full	North view of the temple including the palace, etc.	Uttarakosamangai ..	Ramnad.
D. 378	Half	Two eastern gateways	Uttarakosamangai ..	Ramnad.
D. 379	Half	Four stone pillars on the west of the temple.	Uttarakosamangai ..	Ramnad.
D. 380	Half	Mandapa of Nataraja	Uttarakosamangai ..	Ramnad.
D. 381	Half	North-east view of stone car .. .	Uttarakosamangai ..	Ramnad.
D. 382	Half .. .	Large figures of horse and elephant in Ayyanar temple.	Ramnad	Ramnad.
D 383	Full . ..	Image of Hanuman delivering two lingas to Rama.	Rameswaram . ..	Ramnad.
D. 384	Full	Vessels relating to treasure trove case ..	Patharakudi	Ramnad.
D. 385	Full	Two Images of Siva	Patharakudi	Ramnad.
D. 386	Full	Thirteen Images relating to treasure trove case	Patharakudi	Ramnad.
D. 387	Full	North-east view of the Svami's Vimana ..	Rameswaram	Ramnad.
D. 388	Full ..	Image of Nataraja	Rameswaram	Ramnad.
D. 389	Full	Carvings of Svamis	Tirukuttalam ..	Tinnevelly.
D. 390	Full	Birds-eye view of the temple	Kuttalam	Tinnevelly
D. 391	Full	Dvarapalas of the temple	Kuttalam	Tinnevelly.
D. 392	Full	Eastern view of gateway of Visvanatha temple.	Tenkasi	Tinnevelly.
D. 393	Full	Western view of gateway of Visvanatha temple.	Tenkasi . ..	Tinnevelly.
D. 394	Full	Sculpture of Siva dancing, Visvanatha temple.	Tenkasi	Tinnevelly.
D. 395	Full	Kangalanathar of Visvanatha temple ..	Tenkasi . ..	Tinnevelly.
D. 396	Half . .	Sculpture of Vinayagar with eleven hands of Visvanatha temple.	Tenkasi	Tinnevelly.
D. 397	Full	Tower of the temple	Mannarkovil ..	Tinnevelly.
D. 398	Full	North-west view of tower and inner Court wall in Bhaktavatsalar temple.	Shermadevi	Tinnevelly.
D. 399	Full	North view of the sanctum and Ardha-mandapa, in Bhaktavatsalar temple.	Shermadevi	Tinnevelly.
D. 400	Half	West view of sanctum wall, in Bhaktavatsalar temple.	Shermadevi	Tinnevelly.
D. 401	Half	Inner view of the northern outer wall, in Bhaktavatsalar temple.	Shermadevi	Tinnevelly.
D. 402	Full	Outer view of southern outer wall in Bhaktavatsalar temple.	Shermadevi . ..	Tinnevelly.
D. 403	Full	Unfinished gopuram in Bhaktavatsalar temple	Shermadevi	Tinnevelly.
D. 404	Full	Images in Rama temple.	Shermadevi	Tinnevelly.
D. 405	Full	Images in Rama temple . ..	Shermadevi	Tinnevelly.
D. 406	Full	Images in Rama temple	Shermadevi	Tinnevelly.
D. 407	Full	Images in Rama temple	Shermadevi	Tinnevelly.
D. 408	Full ..	North-west view of Ujjivanatha temple .	Uyyakondan Tirumalai.	Trichinopoly.
D. 409	Full . ..	North-east view of Kartar Mandapa in Jambukesvara temple.	Tiruvanaikaval ..	Trichinopoly.
D. 410	Full	Sculpture of Ekapadamurti in Jambukesvara temple.	Tiruvanaikaval ..	Trichinopoly.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject	Locality.	District.
D. 411	Full	Sculptures of Parvati worshipping Siva in Jambukesvara temple	Tiruvanaikaval ..	Trichinopoly.
D. 412	Full	Sculpture of Subrahmanya in Muktesvara temple.	Samayapuram ..	Trichinopoly.
D. 413	Full	North view of the sanctum of Bōgesvara temple	Samayapuram ..	Trichinopoly.
D. 414	Full	South-west view of the sanctum of the Bōgesvara temple.	Uyyankodan Tirumalai.	Trichinopoly.
D. 415	Full	South-east view of the sanctum of the Bōgesvara temple	Uyyankodan Tirumalai	Trichinopoly.
D. 416	Full	General view of the Bōgesvara temple .	Uyyankodan Tirumalai	Trichinopoly.
D. 417	Full . ..	South view of the Bōgesvara temple ..	Uyyankodan Tirumalai	Trichinopoly.
D. 418	Full ..	General view of Isvara temple and Mahishamarthani cave	Mahābalipuram ..	Chingleput.
D. 419	Full	Front view of Mahishamarthani cave ..	Mahābalipuram ..	Chingleput
D. 420	Full ..	Panel of Ranganatha in Mahishamarthani cave	Mahābalipuram ..	Chingleput.
D. 421	Full . ..	Panel of Mahishamarthani in Mahishamarthani cave	Mahābalipuram ..	Chingleput
D. 422	Full	General view of Arjuna's penance .	Mahābalipuram ..	Chingleput.
D 423	Full . .	Details from Arjuna's penance . ..	Mahābalipuram ..	Chingleput.
D. 424	Full .. .	Details from Arjuna's penance	Mahābalipuram ..	Chingleput.
D 425	Full ..	Details from Arjuna's penance . .	Mahābalipuram .	Chingleput.
D. 426	Full .. .	Details from Arjuna's penance	Mahābalipuram .	Chingleput.
D. 427	Full	Details from Arjuna's penance .	Mahabalipuram .	Chingleput
D 428	Full . .	Details from Arjuna's penance .	Mahābalipuram ..	Chingleput.
D. 429	Full .. .	Details from Arjuna's penance .	Mahābalipuram .	Chingleput.
D 430	Full .	South west view of Ganesa temple ..	Mahābalipuram ..	Chingleput.
D. 431	Full	Front elevation of Varaha cave .	Mahābalipuram ..	Chingleput.
D 432	Full .	Panel of Varāhanathar of Vishnu in Varaha cave	Mahābalipuram ..	Chingleput.
D. 433	Full	Panel of Vāmanavathar of Vishnu in Varaha cave	Mahābalipuram .	Chingleput.
D. 434	Full	Panel of Lakshmi with Elephants in Varaha cave.	Mahābalipuram ..	Chingleput.
D 435	Full .. .	Panel of Parvati with elephants in Varaha cave	Mahābalipuram	Chingleput
D. 436	Full .	General view of the Tirumurti cave ..	Mahābalipuram ..	Chingleput.
D 437	Full . .	Front view of Droupati Ratha .. .	Mahābalipuram ..	Chingleput.
D. 438	Full .. .	Back view of Droupati Ratha . ..	Mahabalipuram ..	Chingleput.
D. 439	Full .	Front view of Arjuna's Ratha ..	Mahabalipuram .	Chingleput.
D 440	Full . ..	Back view of Arjuna's Ratha ..	Mahābalipuram ..	Chingleput.
D 441	Full . ..	Back view of Bhima's Ratha	Mahābalipuram ..	Chingleput
D 442	Full .. .	North east view of Bhima's Ratha .	Mahabalipuram	Chingleput.
D. 443	Full . ..	Details of Gable of Bhima's Ratha ..	Mahabalipuram .	Chingleput
D 444	Full	Front view of Darmaraja's Ratha ..	Mahābalipuram ..	Chingleput
D 445	Full . ..	Back view of Darmaraja's Ratha ..	Mahābalipuram ..	Chingleput
D. 446	Full .. .	Panel of Siva and Parvati on the second storey of Darmaraja's Ratha.	Mahabalipuram .	Chingleput
D. 447	Full ..	Details from Darmaraja's Ratha ..	Mahābalipuram	Chingleput.
D 448	Full	Panel of Arthanarisvara in Darmaraja's Ratha	Mahābalipuram .	Chingleput
D 449	Full .	Front view of Nakula and Sahadeva's Ratha	Mahabalipuram ..	Chingleput.
D. 450	Full	Back view of Nakula and Sahadeva's Ratha.	Mahabalipuram .	Chingleput.
D 451	Full ..	Side view of Nakula and Sahadeva's Ratha	Mahabalipuram	Chingleput.
D 452	Full .. .	Elephant near Pandava Rathas . ..	Mahābalipuram	Chingleput.
D. 453	Full . .	Lion near Pandava Rathas .. .	Mahabalipuram ..	Chingleput.
D 454	Full .. .	Bull near Pandava Rathas .	Mahabalipuram .	Chingleput
D 455	Full ..	Front view of Krishna Mandapam .	Mahābalipuram ..	Chingleput.
D 456	Full .. .	Details of sculptures from Krishna Mandapam	Mahabalipuram .	Chingleput
D 457	Full .. .	Details of sculptures from Krishna Mandapam	Mahabalipuram ..	Chingleput
D. 458	Full .. .	Details of sculptures from Krishna Mandapam	Mahabalipuram .	Chingleput.
D 459	Full . ..	Details of sculptures from Krishna Mandapam	Mahabalipuram .	Chingleput
D 460	Full .. .	Details of sculptures from Krishna Mandapam.	Mahabalipuram ..	Chingleput.
D 461	Full ..	Group of Monkeys	Mahabalipuram .	Chingleput
D 462	Full ..	Lion Throne	Mahabalipuram .	Chingleput
D. 463	Full . .	South view of Vadamalesvara temple .	Orakadam	Chingleput.
D 464	Full ..	Details of gable, Vadamalesvara temple.	Orakadam . ..	Chingleput
D 465	Full . .	South-east view of ruined Siva temple near the Palace	Chendragiri ..	North Arcot.
D 466	Full	North-east view of the ruined Vishnu temple	Timmapuram .	North Arcot.
D 467	Full	Headless figure from the main shrine of the ruined Vishnu temple	Timmapuram ..	North Arcot.
D. 468	Full	North-west view of the main shrine in Kalyāna venkatēsvara temple	Mangapuram ..	North Arcot.

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 469	Full	North-west view of the main shrine in Kalyānavenkatēsvara temple.	Mangapuram ..	North Arcot.
D. 470	Full	West view of the main gopuram of the main shrine in Kalyānavenkatēsvara temple.	Mangapuram ..	North Arcot.
D. 471	Full	South-west view of the main entrance of Tali Siva temple.	Calicut	Malabar.
D. 472	Full	South-west view of the second prakara wall of Tali Siva temple.	Calicut	Malabar.
D. 473	Full	North-west view of the main shrine in Tali Siva temple.	Calicut	Malabar.
D. 474	Full	View of a beam-stone near the Zamorin's Palace.	Calicut	Malabar.
D. 475	Full	East view of the main gate and Dvaja-stamba, Visvanātha temple.	Palghat	Malabar.
D. 476	Full	East view of Bhagavati temple	Agaththaththarai ..	Malabar.
D. 477	Half	South-east view of the Kōtisvara temple.	Rajahmundry ..	Gōdāvari.
D. 478	Full	North-east view of a portion of a main shrine in the Kōtisvara temple.	Rajahmundry ..	Gōdāvari.
D. 479	Full	North-west view of the Markandesvara temple.	Rajahmundry ..	Gōdāvari.
D. 480	Full	North-east view of the oval sanctum of the Jvaraharesvara temple.	Conjeevaram ..	Chingleput.
D. 481	Full	North view of the main shrine of the Jvaraharesvara temple.	Conjeevaram ..	Chingleput.
D. 482	Full	North-east view of the Jvaraharesvara temple.	Conjeevaram ..	Chingleput.
D. 483	Full	East view of the Jvaraharesvara temple.	Conjeevaram ..	Chingleput.
D. 484	Full	North-east general view of the main shrine, of the Jvaraharesvara temple.	Conjeevaram ..	Chingleput.
D. 486	Full	Interior view of the main shrine of the Jvaraharesvara temple.	Conjeevaram ..	Chingleput.
D. 486	Full	Treasure trove finds of two lamps, two trays and a tripod stand	Chitragiri	Bellary.
D. 487	Full	South-east view of deserted Venugōpala temple.	Magala	Bellary.
D. 488	Full	South-west view of deserted Venugōpala temple.	Magala	Bellary.
D. 489	Full	South-east view of the deserted Kallēsvara temple.	Angur	Bellary.
D. 490	Full	East view of the main entrance of Kallēsvara temple.	Angur	Bellary.
D. 491	Full	Images of Pārvati and Paramēsvara together and Sarasvati.	Angur	Bellary.
D. 492	Full	Images of Pārvati and Paramēsvara and of Dakshaprajāpati and his wife together.	Angur	Bellary.
D. 493	Full	North-east view of Utsangi Ammal's temple on the top of the hill.	Utsangidurgam ..	Bellary.
D. 494	Full	Idols relating to Treasure trove case ..	Wandiwash . ..	North Arcot.
D. 495	Full	Idols relating to Treasure trove case ..	Wandiwash	North Arcot.
D. 496	Full	Idols relating to Treasure trove case ..	Wandiwash	North Arcot.
D. 497	Full	Idols relating to Treasure trove case ..	Wandiwash	North Arcot.
D. 498	Full . ..	Western view of Rāmanātha vimana ..	Rāmesvaram ..	Rāmnād.
D. 499	Full .. .	Eastern view of Rāmanātha vimana ..	Rāmesvaram ..	Rāmnād.
D. 500	Full	Vinayakar removed from the first prakara of Rāmanātha vimana	Rāmesvaram ..	Rāmnād.
D. 501	Full	The two storied mandapa	Rāmesvaram ..	Rāmnād.
D. 502	Full	Images of Treasure trove case ..	Viragalur	Trichinopoly.
D. 503	Full	Ornaments in Treasure Trove case ..	Pulivalam	Tanjore.
D. 504	Full .. .	Sculptures of Kachchapēsvara . ..	Conjeevaram ..	Chingleput.
D. 505	Full	South-east view of Narasimha temple ..	Rangapuram ..	Bellary.
D. 506	Full	North-east view of Narasimha temple ..	Rangapuram ..	Bellary.
D. 507	Half	East view of the Droupati ratha ..	Mahābalipuram ..	Chingleput.
D. 508	Half	South-east view of the Droupati ratha .	Mahābalipuram ..	Chingleput.
D. 509	Half	South-east view of Arjuna ratha .	Mahābalipuram ..	Chingleput.
D. 510	Half	North-east view of Dharmaraja ratha.	Mahābalipuram ..	Chingleput.
D. 511	Half	South-east general view of Pandava ratha.	Mahābalipuram ..	Chingleput.
D 512	Half . ..	South-east general view of Nakula and Sahādeva ratha.	Mahābalipuram ..	Chingleput.
D. 513	*Half*	*View of Mahishāsuramardhani panel from* the Mahishāsuramardhani cave.	*Mahābalipuram* ..	*Chingleput.*
D. 514	Half . ..	View of Ranganatha panel from the Mahishasuramardhani cave.	Mahābalipuram ..	Chingleput.
D. 515	Half	Interior Panel from Droupati ratha .	Mahābalipuram ..	Chingleput.
D. 516	Half	View of Vāmana Avatar panel from the Varaha cave.	Mahābalipuram ..	Chingleput.
D. 517	Half	View of Varāha Avatāi panel from the Varaha cave	Mahābalipuram ..	Chingleput.
D. 518	Half	Interior panel of Vishnu fro the Tirumurti cave.	Mahābalipuram ..	Chingleput.
D 519	Half	Two Balipitams in front on the west side of the shore temple.	Mahābalipuram ..	Chingleput.
D. 520	Half	The basement of the Dwajasthambha on the west side of the shore temple.	Mahābalipuram ..	Chingleput.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
D. 521	Half	Panel of Trimurti in the shrine niche of the shore temple on the west side.	Mahābalipuram ..	Chingleput.
D. 522	Half	Lion on the south of the shore temple ..	Mahābalipuram ..	Chingleput.
D. 523	Half	Panel of Kali in the Trimurti cave ..	Mahābalipuram ..	Chingleput.
D. 524	Half	Panel of Siva in the Trimurti cave ..	Mahābalipuram ..	Chingleput.
D. 525	Half	Panel of Brahma in the Trimurti cave ..	Mahābalipuram ..	Chingleput.
D. 526	Hall	North-west general view of Pāndava Rathas.	Mahābalipuram ..	Chingleput.
D. 527	Full	East view of the eighth entrance of the hill fort.	Gooty	Anantapur.
D. 528	Half	Dvārapālas on the lower cave	Trichinopoly ..	Trichinopoly.
D. 529	Half	Sculpture of the lower cave	Trichinopoly ..	Trichinopoly.
D. 530	Half	Sculpture of the lower cave	Trichinopoly ..	Trichinopoly.
D. 531	Half	Sculpture of the lower cave	Trichinopoly ..	Trichinopoly.
D. 532	Half	Sculpture of the lower cave	Trichinopoly ..	Trichinopoly.
D. 533	Half	Sculpture of the lower cave	Trichinopoly ..	Trichinopoly.
D. 534	Half	Sculpture of the lower cave	Trichinopoly ..	Trichinopoly.
D. 535	Half	Dancing figure in Venkatāchalapati temple	Krishnāpuram ..	Tinnevelly.
D. 536	Half	Sculpture of Karna with Nāgapasam ..	Krishnāpuram ..	Tinnevelly.
D. 537	Half	Sculpture of Korava carrying a princess..	Krishnāpuram ..	Tinnevelly.
D. 538	Half	Sculpture of Arjuna with Pāsupatastra ..	Krishnāpuram ..	Tinnevelly.
D. 539	Half	Sculpture of Koratti carrying a prince ..	Krishnāpuram ..	Tinnevelly.
D. 540	Full	Sculpture of a dancing figure	Krishnāpuram ..	Tinnevelly.
D. 541	Half	Sculpture of Chakrapāni on a pillar in Rama temple.	Kumbakōnam ..	Tanjore.
D. 542	Half	Sculpture of Tāndavamūrti on a pillar in Rāma temple.	Kumbakōnam ..	Tanjore.
D. 543	Half	Sculpture of Gajēndramōksham on a pillar in Rama temple	Kumbakōnam ..	Tanjore.
D. 544	Full .. .	Sculpture of coronation of Rāma on a pillar in Rāma temple.	Kumbakōnam ..	Tanjore.
D. 545	Full	Panel from the north-west corner of the Mahāmaṇḍapa in the Hazara Rāma temple.	Hampi	Bellary.
D. 546	Full	Panel from the north-east corner of the Mahāmaṇḍapa in the Hazara Rāma temple.	Hampi	Bellary.
D. 547	Full	Arches on the south-east corner of the Council hall (lower storey).	Hampi	Bellary.
D. 548	Full	Vināyaks on the road to Vothana Vīrabhadra temple.	Hampi	Bellary.
D. 549	Full	Yali on a pillar in Kalyāna Maṇḍapa of Vittala temple.	Hampi	Bellary.
D. 550	Full	Treasure-trove case bull	Ravinuthala ..	Guntūr.
D. 551	Full	Treasure-trove, Saptamāta or seven maidens.	Ravinuthala ..	Guntūr.
D. 552	Full	Treasure-trove, Vināyakar, Nāgakanya and Subrahmanya.	Ravinuthala ..	Guntūr.
D. 553	Full	Treasure-trove, Mahishasuramardhani Sankaracharya and Brahma.	Ravinuthala ..	Guntūr.
D. 554	Full . ..	Treasure-trove, Vishnu, Kālabhairava and Parvati.	Ravinuthala ..	Guntūr.
D. 555	Full	Treasure-trove, Venkataramanasvami ..	Tadpatri	Anantapur.
D. 556	Full	Treasure-trove. Lakshmi	Tadpatri	Anantapur.
D. 557	Full	Treasure-trove, Garuda and three Alvars	Tadpatri	Anantapur.
D. 558	Full	Treasure-trove case, four Alvars	Tadpatri	Anantapur.
D. 559	Full	Treasure-trove, four Alvars . ..	Tadpatri	Anantapur.
D. 560	Half	Carvings from an old car of Sārangapani temple; (1) Devēndra on elephant, (2) Vishnu on Garuda, (3) Brahma and (4) Siva on bull.	Kumbakōnam ..	Tanjore.
D. 561	Half	Carvings from an old car of Sārangapani temple; (1) Krishna, (2) Yōganarasimha; (3) Narasimha tearing Hiranya and (4) Gōpala.	Kumbakōnam ..	Tanjore.
D. 562	Half	Carvings from an old car of Sārangapani temple; (1) Dvārapalaka, (2) Lakshminārāyana, (3) Vaikunthanātha and (4) Dvārapālaka.	Kumbakōnam ..	Tanjore.
D. 563	Half	Carvings from an old car of Sārangapani temple; (1) Srinivāsa, (2) Vishnu on lion, (3) Five headed amman and (4) Vēnugōpala.	Kumbakōnam ..	Tanjore.
D. 564	Half	Amman embracing the Linga	Pattiśvaram ..	Tanjore.
D. 565	Half	Amman in penance	Pattiśvaram ..	Tanjore.
D. 566	Half	Vināyakar in standing posture	Pattiśvaram ..	Tanjore.
D. 567	Half	(1) Nataraja, (2) Amman with Śiva and (3) Amman alone.	Pattiśvaram ..	Tanjore.
D. 568	Half	Shanmukhar	Pattiśvaram ..	Tanjore.
D. 569	Half	Kālasamhāramūrti	Pattiśvaram. ..	Tanjore.
D. 570	Half	Bhiravar	Pattiśvaram. ..	Tanjore.
D. 571	Half	Aghōramurti	Pattiśvaram. ..	Tanjore.

CLASS D—*cont.*

Hindu Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District
D. 572	Half	Dakshinámúrti	Avur	Tanjore.
D. 573	Half .. .	South-west view of the Vimana .. .	Avur	Tanjore.
D. 574	Full	South-east view of Siddhamritatirtam .	Vaithiśvaran kōil ..	Tanjore.
D. 575	Half	Maha Sadasiva on the second western Gopura	Vaithiśvaran kōil ..	Tanjore.
D. 576	Half	Ganga Visarjanar	Vaithiśvaran kōil ..	Tanjore.
D. 577	Half	Bhikshándavar	Tiruvenkadu ..	Tanjore.
D. 578	Full	South-west general view of all the Vimana within the temple.	Tiruvenkadu .	Tanjore.
D. 579	Full	West view of the second western Gōpura with the figure of Aghōramūrti.	Tiruvenkadu .	Tanjore.
D. 580	Full	Treasure-trove case idol of Kalinhi-mardnana of Sri Krishna.	Kattu Edayar ..	South Arcot.
D. 581	Half	North-east view of Sōmalinga temple ..	Sārıpalli .. .	Vizagapatam

CLASS E.

Muhammadan Art and Architecture.

Serial number.	Size.	Subject.	Locality.	District.
E. 1	Full	Nawab's towers	Cuddapah	Cuddapah.
E. 2	Full	Western wall near the Nawab's towers ..	Cuddapah ..	Cuddapah.
E. 3	Full	A portion of a wall near the Nawab's towers	Cuddapah . ..	Cuddapah.
E. 4	Full	Bastion near the Nawab's tower . .	Cuddapah . ..	Cuddapah.
E. 5	Full .. .	Syed Ahmed Sahib's Musjid .. .	Cuddapah .. .	Cuddapah.
E. 6	Full	North view of Fort Bastions ..	Palghat	Malabar.
E. 7	Full	North view of the main gate in the Fort..	Palghat	Malabar
E. 8	Full .. .	North-east view of the old mosque ..	Rajahmundry ..	Gōdāvari
E. 9	Full .. .	View of the north wall of the interior front verandah of the mosque.	Rajahmundry ..	Gōdāvari.
E 10	Full	North-east view of the inscribed stone on the top of the main entrance of the old mosque.	Rajahmundry ..	Gōdāvari.
E. 11	Full	East view of the *Idgah* or the Ramzan masjid.	Adōni	Bellary
E. 12	Full ..	South-east view of the *Idgah* or the Ramzan masjid.	Adoni . ..	Bellary.
E. 13	Full	North-east view of the *Idgah* or the Ramzan masjid.	Adōni . ..	Bellary
E. 14	Full	North-west view of the *Idgah* or the Ramzan masjid	Adōni . ..	Bellary.
E. 15	Full	South-west view of the *Idgah* or the Ramzan masjid	Adōni	Bellary

CLASS F.

Indo-Saracenic Art and Architecture.

Serial number.	Size.	Subject.	Locality.	District.
F. 1	Full	Front view of Lotus Mahal	Hampi	Bellary.
F. 2	Full	Detail of Lotus Mahal	Hampi	Bellary.
F. 3	Full	Watch tower near Lotus Mahal .	Hampi	Bellary.
F. 4	Full	Elephant stables	Hampi .. .	Bellary
F. 5	Full .. .	South view of Queen's bath	Hampi	Bellary.
F. 6	Full . ..	View of Balcony, Queen's bath . ..	Hampi	Bellary
F. 7	Full	South view of guard house . .	Hampi	Bellary.
F. 8	Full	Interior view of guard house	Hampi ..	Bellary
F. 9	Full .. .	West view of watch tower	Hampi ..	Bellary
F. 10	Full	North-east view of the Raja's Palace	Chendragiri	North Arcot
F. 11	Full	North east view of the lower Corridor in the Raja's palace.	Chendragiri	North Arcot.
F. 12	Full	South-east view of the Queen's palace ..	Chendragiri	North Arcot.
F. 13	Full	East view of the Nayaks' Darbar Hall in the palace.	Tanjore	Tanjore
F. 14	Full	South-east view of the Tower in the palace.	Tanjore . ..	Tanjore.

CLASS F—*cont.*

Indo-Saracenic Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
F. 15	Full	North-east view of the Arsenal in the palace.	Tanjore	Tanjore.
F. 16	Full	South-west view of the Krishna vilas tank in the palace.	Tanjore	Tanjore.
F. 17	Full . ..	North-west view of the Krishna vilas tank in the palace.	Tanjore	Tanjore.
F. 18	Full	Interior view of the Nayak's Darbar Hall in the palace.	Tanjore	Tanjore.
F. 19	Full	Interior view of the Mahratta Darbar Hall in the palace	Tanjore	Tanjore.
F. 20	Full	View of seven storeys in front of the palace.	Tanjore	Tanjore.
F. 21	Full	South view of the ruined palace on the top of the hill.	Utsangidurgam ..	Bellary
F. 22	Full	South east view of the ruined palace on the top of the hill.	Utsangidurgam ..	Bellary.
F. 23	Full	North-west view of the ruined palace on the top of the hill	Utsangidurgam ..	Bellary.
F. 24	Full	North-west view of the interior palace and guard room and parapet walls, etc	Utsangidurgam ..	Bellary.
F 25	Full . ..	South east view of the interior palace and guard room and parapet walls, etc.	Utsangidurgam ..	Bellary.
F 26	Full .. .	South-east view of the interior palace and guard room and parapet walls, etc	Utsangidurgam ..	Bellary.
F. 27	Full	North-west view of the Rani palace on the top of the hill.	Utsangidurgam ..	Bellary
F. 28	Full	North-west view of the interior palace on the top of the hill.	Utsangidurgam ..	Bellary.

CLASS G

Historical Forts and European Monuments.

Serial number.	Size	Subject	Locality.	District.
G. 1	Full .	View of tomb in Dutch Cemetery ..	Negapatam	Tanjore.
G 2	Full . ..	Coat of Arms from a tomb in Dutch Cemetery	Negapatam	Tanjore
G 3	Full . ..	Bust of Lord Nelson in Nayak's Darbar Hall	Tanjore . ..	Tanjore
G 4	Full	Marble Statute of Sarabhoji in Nayak's Darbar Hall.	Tanjore	Tanjore.
G 5	Full . ..	Bas-relief sculpture (by Flaxman, R.A.) of Sarabhoji visit	Tanjore .	Tanjore.
G 6	Full . ..	Brass statue of Sarabhoji in Chakrapani temple	Kumbakonam ..	Tanjore.
G. 7	Full	East view of main gateway of fort ..	Tranquebar	Tanjore
G 8	Full .. .	East view of Dansborg	Tranquebar . ..	Tanjore
G. 9	Full	South-east view of Danish church	Tranquebar	Tanjore
G. 10	Full .	North view of Lutheran church .	Tranquebar	Tanjore.
G 11	Full .	South-east view of Goanese church	Tranquebar ..	Tanjore
G 12	Full .	General view of ruined building in the fort	Kondapalle	Kistna
G 13	Full ..	Boundary pillar	Tandiarpet .. .	Madras.
G 14	Full . ..	Boundary pillar ..	Washermanpet ..	Madras
G. 15	Full ..	Inscribed slab	Washermanpet ..	Madras.
G 16	Full .	Fort entrance at Hampi . ..	Hampi ..	Bellary
G 17	Full . ..	View of bastions and Remains of fort walls in Thiruvattumalai	Nelagalpatti ..	Salem
G. 18	Half	View of eastern gate of the fort	Atur ..	Salem
G 19	Half	View of gateway within the fort .	Atur . ..	Salem
G. 20	Half	View of Kalyana Mahal with sculptured base.	Atur .. .	Salem.
G 21	Half .. .	Interior of the palace .	Atur . ..	Salem
G 22	Full ..	Obelisk near the Old Madras Town wall .	Madras ..	Madras
G 23	Full	East view of the remains of an old building	St Thomé . ..	Madras
G 24	Full .	Interior view of the remains of an old building	St Thomé	Madras
G. 25	Full . ..	General view of the remains of an old building.	St Thomé	Madras
G 26	Full ..	Cannon near Mylapore	Madras	Madras
G 27	Full .	Cannon near tank	Kapisthalam ..	Tanjore
G 28	Full	Sangitha Mahal in the palace ..	Tanjore	Tanjore.
G 29	Full ..	Nayak Darbar Hall	Tanjore ..	Tanjore.
G 30	Full	South view of the Base of Armoury in the palace.	Tanjore ..	Tanjore

CLASS G—*cont.*

Historical Forts and European Monuments—cont.

Serial number	Size.	Subject	Locality.	District.
G. 31	Full	Arched dome near the Sangitha Mahal in the palace	Tanjore	Tanjore.
G. 32	Full	Arched Dome near the Sangitha Mahal in the Palace	Tanjore	Tanjore.
G. 33	Full	Mottai gópura in the palace	Tanjore . ..	Tanjore.
G. 34	Full	View of Bastion, little fort . .	Tanjore	Tanjore.
G 35	Full	South view of Queen Mangammal's palace near the central market.	Madura	Madura.
G. 36	Full	Interior view of Queen Mangammal's palace near the central market	Madura	Madura.
G 37	Full	View of doorway and cannon on the west side wall of Queen Mangammal's palace near the central market.	Madura	Madura
G. 38	Full .. .	Front view of the main shrine in the hill fort	Dindigul . .	Madura
G. 39	Full	East doorway of the hill fort ..	Dindigul	Madura
G. 40	Full	South view of the main shrine of the hill fort.	Dindigul ..	Madura.
G 41	Full	South-west view of the fort wall .	Dindigul	Madura
G. 42	Full	Second doorway of the hill fort	Dindigul . ..	Madura.
G. 43	Full	North-west view of the ruined building in the hill fort	Dindigul	Madura
G. 44	Full	South view of the Mandapa, hill fort ..	Dindigul ..	Madura
G. 45	Full	North-west of the fort wall .. .	Dindigul	Madura
G. 46	Full .. .	General view of the hill fort . ..	Dindigul . ..	Madura
G 47	Full	South view of Tirumal Nayak's ruined palace showing the ruins of the fort wall in the temple	Alagarkovil .	Madura.
G. 48	Full	West view of Tirumal Nayak's Ruined palace showing the ruins of the Fort wall in the temple	Alagarkovil .	Madura
G. 49	Full	Tirumal Nayak's Mandapa showing the ruins of the fort wall in the temple	Alagarkovil ..	Madura
G 50	Full	South-east general view of palace and ruined Siva temple	Chendragiri .	North Arcot
G 51	Full .. .	East view of first gate of Chendragiri fort	Chendragiri	North Arcot.
G. 52	Full	East view of second gate of Chendragiri fort	Chendragiri .	North Arcot
G 53	Full ..	North-west view of the powder magazine in the ruins of Fort St David.	Cuddalore .	South Arcot.
G. 54	Full .. .	View of old fort wall .	Cuddalore . ..	South Arcot
G. 55	Full . ..	South west view of a partly collapsed Bastion	Hisakota	Bellary.
G 56	Full ..	West view of a partly collapsed Bastion	Hisakota . ..	Bellary.
G. 57	Full .. .	East view of a partly collapsed Bastion	Hisakota	Bellary.
G. 58	Full . ..	South east view of a partly collapsed Bastion	Hisakota ..	Bellary
G 59	Full	South-west view of a partly collapsed Bastion.	Nagalapur .	Bellary
G 60	Full	Granary on Krishnagiri hill . .	Gingee . .	South Arcot.
G. 61	Full ..	Gateway on Krishnagiri hill .	Gingee .	South Arcot
G. 62	Full .. .	Outer view of the prison-house at the fort.	Gingee . .	South Arcot
G. 63	Full	Part of the prison-house at the fort	Gingee . ..	South Arcot
G. 64	Full	The other part of the prison-house at the fort	Gingee	South Arcot.
G 65	Full	North view of the prison-house at the Hill fort	Gooty ..	Anantapur
G 66	Full	South-west view of the prison-house at the hill fort	Gooty	Anantapur.
G 67	Full	Sir Thomas Munro's house	Anantapur .. .	Anantapur

CLASS H

Modern Indian Art and Architecture.

Serial number.	Size	Subject	Locality	District
H. 1	Full	Wood carving panel representing Ganga on a crocodile	Kumbakonam ..	Tanjore
H. 2	Full	Wood carving Panel representing Krishna and Gopis	Kumbakonam .	Tanjore
H. 3	Full	Old boats ..	Tranquebar ..	Tanjore
H. 4	Full	Doorway, Kanmikāparamēsvari temple .	Tadpatri	Anantapur
H. 5	Full	Archway in the second entrance Kanmikāparamēsvari temple containing the Dasāvatāram	Tadpatri	Anantapur.

CLASS H—*cont.*

Modern Indian Art and Architecture—cont.

Serial number.	Size.	Subject.	Locality.	District.
H. 6	Full	Parvati shrine in Siva temple next to Sārangapāni temple.	Kumbakōnam ..	Tanjore.
H. 7	Full	Front view of the Wooden Car, Srinivāsaperumal temple.	Tirupati	Chittoor.
H. 8	Full	Modern sculpture work in Tripurāntakēsvara temple.	Kūvam	Chingleput.
H. 9	Half	Sōmasutra view of the Goddess's central shrine, Mayūranātha temple.	Māyavaram	Tanjore.
H. 10	Full	Stone pier with capital	Tiruvadamarudūr ..	Tanjore.
H. 11	Full	Stones intended for piers in a modern Mandapa.	Māyavaram	Tanjore.
H. 12	Full	Stone masons at work in renovating the Vishnu temple.	Madura	Madura.
H. 13	Full	Interior view of third prākara (west side.)	Rāmesvaram	Ramnad.
H. 14	Full	South east view of third inner entrance.	Rāmesvaram	Rāmnād.
H. 15	Full	South-west view of third inner entrance.	Rāmesvaram	Rāmnād.
H. 16	Full	Visālakshi shrine	Rāmesvaram	Rāmnād.
H. 17	Full	South-west view of Subramania shrine.	Rāmesvaram	Rāmnād.
H. 18	Half	Sculptured work in progress	Ambāsamudram .	Tinnevelly.
H. 19	Full .. .	Sculpture of Dvārapāla	Tiruvanaikāval ..	Trichinopoly.
H. 20	Full	Sculpture of lion (Simha)	Tiruvanaikāval ..	Trichinopoly.
H. 21	Full	Sculpture of Dandāyudapāni	Uriyur	Trichinopoly.
H. 22	Full	Mandapa in Siva temple	Uriyur	Trichinopoly.

CLASS I.

Miscellaneous.

Serial number	Size.	Subject.	Locality.	District.
I. 1	Full ..	Birds-eye view of Hampi ruins	Hampi	Bellary.
I. 2	Full	Birds-eye view of Hampi ruins	Hampi	Bellary.
I. 3	Full	Oil Press	Villivākkam	Chingleput.
I. 4	Full	Portrait of Sir Thomas Munro from an old engraving in his court room.	Anantapur	Anantapur.
I. 5	Full	East view of a cleft in Poimānkaradu wherein the figure of a deer appears.	Nelagalpatti	Salem.
I. 6	Half	Birds-eye view of the proposed rebuilding of the central shrine of the temple.	Tiruvadamarudūr ..	Tanjore.
I. 7	Full	Birds-eye view of the Māyavaram temple.	Māyavaram	Tanjore.
I. 8	Full	Wooden car	Nallūr	Tanjore.
I. 9	Full	Tank with Island, Tyāgarāja temple .	Tiruvālūr	Tanjore.
I. 10	Full .. .	Drawing of a car from an old picture ..	Tiruvadamarudūr ..	Tanjore.
I. 11	Full	View of upper water fall near temple ..	Kuttalam	Tinnevelly.
I. 12	Full	View of lower water fall near temple with tank.	Kuttalam	Tinnevelly.
I. 13	Full	View of water fall near temple	Papanasam	Tinnevelly.
I. 14	Full .. .	South-west view of a deserted village ..	Nagalapur	Bellary.
I. 15	Full . ..	Plan of the proposed remodelling of the first prākāra of Rāmanātha temple.	Rāmesvaram	Rāmnād.
I. 16	Full	View of a natural stone Nāgahood ..	Tummanagutta ..	Cuddapah
I. 17	Full	Coins (front view)	Periyapatnam ..	Rāmnād.
I. 18	Full	Coins (reverse)	Periyapatnam ..	Rāmnād.
I. 19	Full	General view of museum	Bezwada	Kistna.

Note.—Bromide and silver prints from the above negatives may be had on application at the following rates—Full plate As. 8, half plate As. 6, quarter plate As. 4.

APPENDIX C.

The following is a list of books added to this Office Library during the year **1912–13.**

1. Indian Antiquary (Current numbers).
2. Epigraphia Indica (do.).
3. The Indian Review (do.).
4. The Madras Christian College Magazine (Current numbers).
5. The Journal of the Royal Asiatic Society (Quarterly).
6. The Journal of South Indian Association (do.).
7. The Journal of Indian Art and Industry (do.).
8. Repertorie D'Art, et D'Archoælogie (do.).
9. Census of India, 1911, Volume XII—
   Madras, Part 1 Report.
   Imperial and Provincial Tables, Part II.
10. Census of India, Volume XI, Coorg Report and Tables.
11. Indian Chronography, R. Sewell.
12. Local Rules and Orders of the Madras Presidency, Volume I.
13. List of Villages in the following districts of Madras Presidency :—
    Gōdāvari, Kistna, Guntūr, Nellore, Chingleput, South Arcot, North Arcot, Trichinopoly, Madura, Tinnevelly, Rāmnād, Malabar, Anantapur, Kurnool, Cuddapah, Bellary, South Canara, Salem, Chittoor and Nilgiris.
14. A Descriptive Catalogue of the Tamil Manuscripts in the Government Oriental Manuscripts Library, Madras.
15. A Descriptive Catalogue of the Sanskrit Manuscripts in the Government Oriental Manuscripts Library, Madras, Volume XII.
16. A Descriptive Catalogue of the Sanskrit Manuscripts in the Government Oriental Manuscripts Library, Madras, Volume XIII.
17. A Descriptive Catalogue of the Sanskrit Manuscripts in the Government Oriental Manuscripts Library, Madras, Volume XIV.
18. Kumārathanthram, Shunmugasundara Mudaliyar.
19. Kāmigāgamam, Alagappa Mudaliyar.
20. Vēdāranya Māhāthmyam, Harihara Sastri.
21. Revised and reprinted portions of Bower Manuscripts, Parts V to VII, pages 221–230.
22. The Ideals of Indian Art, E. B. Havell.
23. Classified Catalogue of the Library of the Director-General of Archæology in India.
24. The Government of Madras Civil Budget Estimate for 1912-13.
25. The Memoirs of Baber.
26. History of the Tranquebar Mission, F. Fenger.
27. Report of the Conference as regards Museums in India held at Calcutta on December 27th to 31st, 1907.
28. Ganita-Sara-Sangraha of Mahaviracharya with English Translation, and Notes, M. Rangacharya, M.A.
29. The Madras Quarterly Civil List corrected up to 1st October 1912.
30. The Lawrence Asylum Press Almanac for 1913.
31. The Annual Report of the Archæological Department, Southern Circle, Madras, Volume III, 1910-12.
32. The Annual Report of the Epigraphical Department, Southern Circle, Volume IV, for 1910-12.
33. Annual Report of Archæological Survey of India, Frontier Circle, for 1911-12.
34. Annual Report of the Superintendent, Muhammadan and British Monuments, Northern Circle, for the year ending 31st March 1912.
35. Annual Report of Archæological Survey of India, Eastern Circle, for 1911-12.
36. Progress Report of the Archæological Survey, Western Circle, for the year ending 31st March 1912.
37. Report of the Superintendent, Archæological Survey, Burma, for the year ending 31st March 1912.
38. Report on the working of the Archæological Department in Mysore State for 1910-11.
39. Annual Report for 1908-09 on Archæological Survey of India by the Director-General of Archæology.
40. List of Surplus Stores available for sale or transfer in the Public Works Workshop on 30th September 1912.
41. Abstract of the Rules relating to Public Service Examinations in the Madras Presidency.
42. Visvakarma, Part I, for July 1912.
43. Do. Part II, for October 1912.
44. Ruins of Desert Cathey, Volumes I and II, M. A. Stein.
45. Picturesque Nepal, P. Brown.

APPENDIX D.

List of Archæological works proposed to be undertaken during the year 1913-14.

Item number.	District.	Locality.	Name of monument and nature of work.	Grant for 1913-14.
				Rs.
1	Ganjam	Jaugoda	Repairs to the roof over Asōka's inscriptions on Jaugoda rock.	285
2	Vizagapatam.. ..	Sankaram	Repairs to Buddhist Monastery .. .	120
3	Vizagapatam.. ..	Sankaram	Pay of watchman for Buddhist Monastery.	60
4	Vizagapatam.. ..	Ramatirtham.. ..	Repairs to Buddhist Monastery	125
5	Vizagapatam.. ..	Ramatirtham.. ..	Pay of watchman for Buddhist Monastery.	60
6	Kistna	Bezwada	Provision of notice board for rock-cut caves.	22
7	Kistna	Kondapalle	Repairs to the Hill Fort and Palace ..	150
8	Kistna	Kondapalle	Pay of watchman for the Hill Fort and Palace.	72
9	Kistna	Guntapalle	Repairs to Buddhist caves	150
10	Guntūr	Amaravati	Pay of watchman for Buddhist Stupa ..	65
11	Guntūr	Amaravati	Repairs to watchman's shed ..	50
12	Anantapur	Anantapur	Repairs to Sir Thomas Munro's House ..	100
13	Anantapur	Anantapur ..	Repairs to the well in the compound of Sir Thomas Munro's House.	200
14	Anantapur	Anantapur .. .	Fixing tablet in the Old Court-room of Sir Thomas Munro's House	100
15	Anantapur	Gooty	Repairs to Hill Fort and pay of 2 watchmen at Rs. 7 per month.	300
16	Anantapur	Gorantla	Repairs to Old Vishnu temple ..	500
17	Anantapur	Lepakshi	Repairs to Virabadhara temple ..	100
18	Anantapur	Kambaduru	Repairs to and removal of vegetation from Old Siva temple	100
19	Anantapur	Madakasira	Repairs to Hill Fort, Gateway and two Bastions.	200
20	Anantapur	Penukonda	Repairs to the Northern Gateway of Fort.	100
21	Anantapur	Penukonda	Repairs to Gagana Mahal	100
22	Anantapur	Penukonda	Repairs to Isvara temple	200
23	Anantapur	Penukonda .. .	Repairs to Rama temple . ..	400
24	Bellary	Bāgali	Repairs to Kallēsvara temple	200
25	Bellary	Tambarahalli.. ..	Repairs to Ancient Well . .	1,000
26	Bellary	Hampi	Repairs to Chandra Sekara temple ..	200
27	Bellary	Hampi	Repairs to King's Balance	20
28	Bellary	Hampi	Repairs to Temple of Vishnu (No. 1) near the Sulai Bazaar.	300
29	Bellary	Hampi	Repairs to Temple of Vishnu (No. 2) near the Vittala temple.	1,500
30	Bellary	Hampi	Repairs to and removal of vegetation from Mohammedan Dargah and Tomb.	100
31	Bellary	Hampi . ..	Repairs to the Domed Gateway to the east of the citadel.	200
32	Bellary	Hampi	Repairs to Fort Gateway on the Talarigatta road	100
33	Bellary .. .	Hampi	Removal of vegetation and repairs to the Mandapa in a field to the west of Talarigatta road	200
34	Bellary	Hampi	Repairs to Foot-Print temple	20
35	Bellary	Hampi .. .	Repairs to Queen's Bath	50
36	Bellary	Hampi	Repairs to Octagonal Bath.. .. .	200
37	Bellary	Hampi .. .	Repairs to Octagonal Pavilion . .	200
38	Bellary	Hampi	Repairs to Throne Platform ..	50
39	Bellary	Hampi	Repairs to Basement of an old building near the above	200
40	Bellary	Hampi . ..	Repairs to Underground Chamber.. ..	200
41	Bellary	Hampi	Provision of pathway to the Stone Door..	20
42	Bellary	Hampi	Petty repairs to Stone Trough	15
43	Bellary	Hampi	Repairs to Mosque in the Dannaik's enclosure.	100
44	Bellary	Hampi	Repairs to Mohammedan Watch Tower in the Dannaik's enclosure.	400
45	Bellary	Hampi	Repairs to the Band Tower in Dannaik's enclosure	100
46	Bellary	Hampi	Repairs to the Lotus Mahal in the Zenana enclosure.	200
47	Bellary	Hampi	Repairs to the Basement of Palace in the Zenana enclosure.	200
48	Bellary	Hampi	Repairs to Guard Room in the Zenana enclosure.	100
49	Bellary	Hampi	Repairs to the Nothern Watch Tower in the Zenana enclosure.	200
50	Bellary	Hampi	Repairs to the South-Eastern Watch Tower in the Zenana enclosure.	200
51	Bellary	Hampi	Repairs to Guard Room outside the Zenana enclosure.	200
52	Bellary	Hampi	Provision of coolies for the removal of vegetation from Hampi Ruins.	700

List of Archæological works proposed to be undertaken during the year 1913–14—cont.

Item number.	District.	Locality.	Name of monument and nature of work.	Grant for 1913–14.
				Rs.
53	Bellary	Hampi	Repairs to Achutanarayana temple ..	200
54	Bellary	Hampi	Repairs to Ganigatta temple	200
55	Bellary	Hampi	Repairs to Hazari Rama temple	300
56	Bellary	Hampi	Repairs to Jain temples	200
57	Bellary	Hampi	Repairs to Monolithic Statue of Narasimha and Siva temple alongside of it.	200
58	Bellary	Hampi	Repairs to Pattabirama temple	1,500
59	Bellary	Hampi	Repairs to Vittala temple, attendent Mandapas and Gopurams.	2,000
60	Bellary	Hampi	Watchman for Vittala temple, attendent Mandapas and Gopurams	60
61	Cuddapah	Pushpagiri	Repairs to Pushpagiri temples	500
62	Cuddapah	Vontimitta	Repairs to Kodanda Rama temple ..	1,000
63	Cuddapah	Attirala	Removal of vegetation and repairs to Parasurama temple.	440
64	Cuddapah	Sompalle	Repairs to Vishnu temple	500
65	Coimbatore	Sirkar Periyapalaiyam	Repairs to Sugiesvara temple on the bank of a tank.	500
66	Nilgiris	Hulhkaldrug ..	Repairs to Fort	30
67	Nilgiris	Batlada Acheni (near Kotagiri).	Removal of vegetation from the group of Sculptured Dolmens.	10
68	Nilgiris	Melkundah (near Ootacamund).	Removal of vegetation from Sculptured Dolmens.	5
69	Malabar	Telhicherry	Repairs to Fort.	100
70	Malabar	Sultan's Battery ..	Repairs to Jain temple	30
71	Malabar	Palghat	Repairs to Fort	500
72	South Canara ..	Bekal	Repairs to Fort	500
73	Salem	Attur	Removal of vegetation from the Fort ..	500
74	Salem	Namakkal	Repairs to Hill Fort	50
75	Salem	Namakkal	Repairs to Narasimha temple	300
76	Salem	Namakkal	Ranganatha temple, repairs to	200
77	Salem	Taramangalam ..	Repairs to Siva temple	500
78	North Arcot	Arcot	Watchman for the Delhi Gate	48
79	North Arcot	Arcot	Union Tax for ditto	4
80	North Arcot	Chendragiri	Repairs to Palace Buildings .. .	500
81	North Arcot .. .	Vellore	Repairs to Hindu temple in the Fort ..	300
82	North Arcot . .	Vellore	Repairs to Fort	400
83	North Arcot .. .	Ukkal	Repairs to the Vishnu temple .	175
84	South Arcot	Gingee	Watchman for the Fort	150
85	South Arcot ..	Gingee . ..	Repairs to Fort	1,000
86	South Arcot	Cuddalore	Repairs to Fort St. David . ..	150
87	Chingleput	Mamallapuram (Seven Pagodas)	Maintenance of ancient monuments and repairs.	2,000
88	Chingleput	Mamallapuram (Seven Pagodas).	Repairs to Shore temple	250
89	Chingleput	Mamallapuram (Seven Pagodas)	Repairs to Sthala Sayana temple	500
90	Chingleput	Mamallapuram (Seven Pagodas).	Repairs to Varaha temple and Cave ..	200
91	Chingleput	Tiruvadanthai ..	Repairs to Nityakalyana Buvaraga temple and Mandapa	1,000
92	Chingleput	Vayalur	Repairs to Tirupulesvara temple . ..	500
93	Chingleput	Chingleput	Provision of notice boards for ancient monuments in the Chingleput District.	500
94	Madras	Madras	Repairs to Old Madras Town Wall, and Obelisks.	200
95	Madras	Madras	Repairs to Cornwallis Memorial	50
96	Tanjore	Kumbakonam ..	Repairs to Rama Temple	500
97	Tanjore	Kumbakonam ..	Repairs to Kasiviswanatha temple ..	320
98	Tanjore	Tirukalithattai ..	Repairs to Vedapurisvara temple ..	200
99	Tanjore	Tanjore	Repairs to Palace Buildings	60
100	Tanjore	Tanjore	Repairs to Sangita Mahal	700
101	Tanjore	Tanjore	Repairs to North Gopuram in Tanjore Palace	60
102	Tanjore	Tanjore	Maintenance of the little fort enclosing the great temple	150
103	Tanjore	Tanjore	Repairs to the Arsenal in the Tanjore Palace.	400
104	Tanjore	Tanjore	Repairs to the tower over the main entrance to the enclosure of the Great temple.	1,500
105	Tanjore	Tanjore	Repairs to the two Domed Halls of the Tanjore Palace enclosure.	340
106	Tanjore	Tanjore	Repairs to the Statue Hall of the Tanjore Palace.	175
107	Tanjore	Tanjore	Repairs to the lightning Conductor of the Clock tower, Tanjore Palace.	20
108	Tanjore	Tanjore	Repairs to roof and retaining walls of the Krishna Vilas Tank Tanjore Palace.	290
109	Tanjore	Tranquebar	Repairs to Dansborg	500

List of Archæological works proposed to be undertaken during the year 1913–14—cont.

Item number.	District.	Locality.	Name of monument and nature of work.	Grant for 1913–14.
				Rs.
110	Tanjore	Tranquebar	Repairs to Town Gateway	200
111	Tanjore	Negapatam	Repairs to Dutch Cemetery	200
112	Tanjore	Kalattur	Repairs to Unnathapurisvara temple ..	200
113	Trichinopoly ..	Gangaikondashōla-puram.	Repairs to the Brihadisvara temple ..	500
114	Trichinopoly ..	Kamarasavalli ..	Repairs to Siva temple	500
115	Trichinopoly ..	Samayapuram ..	Repairs to Bogēsvara temple	400
116	Trichinopoly ..	Trichinopoly	Repairs to Preston's Battery	400
117	Trichinopoly ..	Alambakam	Removal of vegetation from Varadarāja-perumal temple.	200
118	Madura	Koilpatti	Maintenance of Kailasanāda Temple. ..	7
119	Madura	Dindigul	Pay of watchman for Rock Fort	90
120	Madura	Alagarkovil	Alagarmalai Cavern and Panchapāndava beds, removal of vegetation from—.	100
121	Tinnevelly	Adichanallur ..	Pay of watchman for Prehistoric remains.	60
122	Tinnevelly	Anjengo	Repairs to Fort	60
123	....	.. .	Contingency for urgent repairs	5,882
			Total ..	43,000

APPENDIX E (1).

STATEMENT of expenditure on Conservation work carried out during the year 1912-13.

Item number.	District.	Taluk.	Place	Name of monument.	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks
				First Circle.		Rs.	Rs A. P.	
1	Ganjam .. .	Gumsur	Kotakolla	Jagadesvara and Gangadara temples.	Painting with coloured surki mortar the joints of stones and relaying displaced flooring stone (Repairs, special).	630	20 0 0	Repairs were all done during 1910-1911 and 1911-12. Final payment was made in 1912-13; work completed. No contribution paid.
2	Do.	Berhampur ..	Pandia village ..	Asoka's inscriptions at Jaugada	No repairs done during 1912-13.	285	..	Work was not carried out for want of lead wool indented for on the Director-General of Stores.
3	Vizagapatam ..	Anakapalle ..	Sankaram	Buddhist remains ..	Annual repairs to Buddhist remains for 1911-12.	150	30 10 3	Work completed.
4	Do. ..	Do. ..	Do.	Do ..	Pay of watchman to Buddhist remains for 1912-13.	60	63 12 11	Rupees 8 required to pay the wages of the watcher owing to increase of pay on account of famine batta.
5	Do. ..	Do. ..	Do.	Do ..	Repairs to Buddhist remains for 1912-13.	120	116 9 7	Rupees 3 required to complete the work in progress.
6	Do. .	Do. ..	Do.	Do ..	Providing notice boards to the Buddhist remains.	70	65 15 0	Work completed.
7	Do. ..	Do. ..	Do	Do. ..	Clearing paths on the Sankaram Hills ..	25	24 6 6	Do.
8	Do. ..	Vijayanagaram ..	Ramatirtham ..	Do. ..	Maintenance of a watcher	60	5 0 0	
9	Do. ..	Do. ..	Do. ..	Do. ..	Do. for 1912-13 ..	60	69 12 0	Rupees 2 required to pay the wages of the watcher on account of famine batta.
10	Do. ..	Do. ..	Do. ..	Do. ..	Providing notice boards to the Buddhist remains at Ramatirtham.	70	56 5 10	In progress. Rs. 16 required to complete the work.
11	Gödavari ..	Rajahmundry ..	Rajahmundry ..	Mosque	Providing a notice board (Repairs, special).	10	7 13 10	Completed.
				Second Circle.				
12	Guntür	Bapatla	Bapatla	Bhavanarayana temple.	Fixing a notice board (Repairs, special) ..	30	26 0 0	In progress. The balance of the estimates, *i.e.*, Rs. 18 will be required to complete the works.
13	Do..	Do.	Motupalli	Buddhist remains at Sakaladanidibba.	Do. do ..	32	25 0 0	
14	Do.	Do.	Do.	Chöla temple ..	Do do ..	30	24 0 0	
15	Do.	Guntür	Undavalli	Four-storeyed rock-cut cave.	Special repairs consisting of replacing fallen pillars, closing cracks in roofs and pillars and patch repairs.	500	* 341 0 0	* Incurred during 1912-13 and excludes the outlay of Rs. 144-13-11 incurred during 1911-12. The work is in progress. A sum of Rs. 15 will be required for expenditure during 1913-14.

Statement of expenditure on Conservation work carried out during the year 1912–13—*cont.*

Item number.	District.	Taluk.	Place.	Name of monument.	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks
					Second Circle—cont.	Rs.	Rs. A. P.	
16	Guntūr	Ongole	Kanuparti	Mounds . .	(Special repairs)—Providing a notice board.	17	15 0 0	Work in progress. A sum of Rs. 2 will be required for expenditure during 1913-14.
17	Do.	Sattenapalle ..	Amaravati .	Mound containing a Buddhist stupa and other remains.	(Annual repairs)—Maintaining a watcher.	60	60 0 0	Completed.
18	Do.	Do. ..	Daramkota ..	Fort	Special repairs)—Providing a notice board.	22	..	In progress.
19	Kistna	Bezwada ..	Kondapalli ..	Hill fort . .	Maintaining a watchman	72	49 0 0	The estimate having been sanctioned late, the watchman was employed only for 8 months.
20	Do.	Do. ..	Do. ..	Do. .. .	(Annual repairs)—Removing cactus from the site, and building up the old walls in places dangerous to the public.	150	135 0 0	Work completed. There was saving in the rate for removing cactus. There is nothing more to be spent on the estimate.
21	Do.	Nandigama ..	Jaggayyapet ..	Buddhist remains of a stupa on the hill.	Provision of a notice board in lieu of the one stolen	20	..	Work in progress.
22	Do.	Bezwada ..	Bezwada ..	Nagarēsvara temple on the hill side at Bezwada.	Annual repairs	10	10 0 0	Completed.
23	Do.	Do. ..	Mogalrajapuram ..	Caves on the hill ..	Annual repairs	30	30 0 0	Do.
24	Do. ..	Bunder	Bunder ..	Dutch cemetery ..	Special repairs were carried out for keeping the monument in good condition.	115	140 0 0	Do.
25	Do.	Ellore	Guntapalli ..	Buddhist caves .	Clearing vegetation (special repairs) ..	150	45 0 0	Do.
26	Do.	Gudivada ..	Gudivada . ..	Lanjadibba	(Special repairs)—Providing notice board ..	15	..	In progress.
					Third Circle.			
27	Bellary	Hospet	Hampi	Citadel and aqueduct.	Repairs to pathways done	170	19 0 0	Work completed.
28	Do.	Do.	Do. .. .	The underground chamber and basement of an old building.	Repairs to the newly exhumed basement done.	1,734	45 0 0	Do.
29	Do.	Do.	Do	Hazara Rama temple.	Propping up the broken beams below cornice done.	175	59 0 0	Do.
30	Do	Do.	Do. .. .	Groups of buildings in the Zenana enclosure	(1) Repairing the palace basement including filling in earth all round.	..	..	In progress.
					(2) Grouting cracks in walls of the building in the north-west corner.	..	..	Completed.
					(3) Side walls all round the water pavilion repaired with rough stone to prevent drainage water getting into the tank.	..	..	Do.
					(4) Basement all round watch tower south-east completely repaired and the fort wall on which it rests was built up and the corner made water tight.	..	..	Do.
					(5) Pathways are being repaired	1,640	1,033 0 0	In progress. Rs. 147 required to complete the work.

Statement of expenditure on Conservation work carried out during the year 1912-13—*cont.*

Item number.	District.	Taluk.	Place.	Name of monument.	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks.
				Third Circle—cont.		Rs.	Rs. A. P.	
31	Bellary	Hospet	Hampi	Lotus Mahal ..	Roughstone revetment for retaining the earthern bank all round.	350	203 0 0	Completed.
32	Do.	Do.	Do.	Elephant stables ..	Grouting walls and plastering outside completed. Gravelling pathway and stables done.	580	469 0 0	Work in progress. Rs. 111 required to complete the work.
33	Do.	Do.	Do.	Concert Hall	Grouting joints and cracks in walls done. Gravelling the central yard and pathway finished.	440	289 0 0	Work in progress. Rs. 151 required to complete the work.
34	Do.	Do.	Do. .. .	Muhammadan watch-tower.	Roughstone wall for protecting the basement has been built and a pathway for the structure formed.	800	110 0 0	Work in progress. Rs. 690 required to complete the work.
35	Do.	Do.	Do.	Chandra Sekara temple.	Breaches in the compound wall have been built up with burnt stone laid dry.	355	108 0 0	Work in progress. Rs. 247 required to complete the work.
36	Do.	Do.	Do.	Octagonal bath near Sarasvati temple on rock.	Roughstone walling all round the bath put in thorough order Barbed wire-fencing put up to prevent stray-cattle from getting in.	475	51 0 0	Work in progres. Rs. 424 required to complete the work.
37	Do.	Do.	Do.	*Krishna temple* ..	A proper approach to the temple on the south side from the main road has been formed.	170	110 0 0	Work in progress. Rs. 60 required to complete the work.
38	Do.	Do.	Do.	Jain temples south off Pampapathy temple.	Basement all round No. 5 temple completely repaired.	1,680	62 0 0	Work completed.
39	Do.	Do.	Do.	Achutanarayana temple.	Gopuram was repaired and the fallen stones are being put in order.	1,350	213 0 0	Do.
40	Do.	Do.	Do.	Vittala temple ..	Platform of south Mandapa put in thorough state of repair. A buttress for the rear wall of mandapa to north-east is being built.	1,725	445 0 0	In progress. Rs. 1,280 required to complete the work.
41	Do.	Do.	Do.	Ganigetta temple near Kamalapur.	Roughstone walling to retain the earth cutting around temple done.	745	339 0 0	Of the two estimates the first is completed. The second is in progress. Rs. 146 required to complete it.
42	Do.	Do.	Do.	Pattabhirama temple.	Roof of mandapa to south-east is being repaired, clearance of compound about main structures done. Breach in compound wall in north-west corner completely repaired.	3,800	1,641 0 0	In progress. Rs. 2,159 required to complete the work.

Statement of expenditure on Conservation work carried out during the year 1912–13—*cont*

Item number	District.	Taluk	Place	Name of monument	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks.
				Third Circle—cont.		Rs	Rs. A. P.	
43	Bellary .. .	Hospet ..	Hampi .. .	Raghunatha temple in Malyavantam.	Fallen and falling drip stones of Lakshmi-devi mandapa set in position and new parapet wall built	3,360	79 0 0	Work completed.
44	Do. .. .	Do . ..	Do.	Ancient monuments at Hampi.	Removal of vegetation	238	261 0 0	Do.
45	Do. .. .	Do. . .	Thimmalapur ..	Siva temple Vonti godu, and Gopala-krishna temple.	Clearance of vegetation done in both the temples.	1,708	255 0 0	Works stopped under instructions from the Additional Archaeological Superintendent, Madras.
46	Do. .. .	Harpanahalli ..	Nilagunda ..	Bhimesvara temple .	Fallen and displaced stones of the sanctum tower have been set right Thick vegetation thereon has been cleared, roots being chiselled out and joints pointed with cement. Cracks in walls grouted.	950	844 0 0	Work in progress. Rs. 106 required to complete the work.
47	Do. . ..	Hadagalli .	Hirahadagalli ..	Kallesvara temple ..	The leaky roof of the front and side mandapa made watertight and modern walls at sides pointed	110	54 0 0	Work completed.
48	Do.	Hospet . ..	Hampi ..	Throne platform .	Nature of work done not stated by the Public Works Department.	260	142 0 0	Work in progress. Rs. 118 required for completing the work.
49	Do. .. .	Adoni	Adoni .. .	Ancient monuments (name of monument not given by Public Works Department).	Do	1,755	43 0 0	Work completed.
50	Do.	Alur	Chippagiri	Chennakesvara temple.	Do	195	181 0 0	Work in progress. Rs. 20 required to complete it.
51	Anantapur ..	Gooty	Gooty . .	Fort and its buildings including also the fortifications at the foot of the hill.	Nature of work done not stated by Public Works Department	3,420	72 0 0	Work completed.
52	Do. .	Do	Do	Do.	Pay of watchman	84	90 0 0	Rupees 168 required
53	Do. ..	Anantapur ..	Anantapur ..	Sir Thomas Munro's house and the two wells dug by him.	Nature of work done not stated by the Public Works Department.	630	87 0 0	Work completed.
54	Do. ..	Gooty	Uravakonda ..	Mallikarjuna temple ..	Do.	250	13 0 0	Do.
55	Do. .	Tadpatri	Tadpatri	Rama temple ..	Do.	1,770	17 0 0	Do.
56	Do. ..	Penukonda ..	Penukonda ..	Rama's Bastion ..	Gate and locks provided. Modern plaster removed and replaced to suit old work. Cutstone corbels introduced in places.	600	481 0 0	Do.

Statement of expenditure on Conservation work carried out during the year 1912-1913—*cont*

Item number	District.	Taluk	Place	Name of monument	Description of repairs done	Amount of estimate	Actual expenditure	Remarks
					Third Circle—cont	Rs	Rs A. P	
57	Anantapur .	Penukonda ..	Penukonda	Gagan Mahal ..	Whitewashing, closing leaks, repairing doors and windows, patch plastering, etc	135	73 0 0	Work in progress Balance of estimate will be required to finish the works.
58	Do	Do ..	Bukkāpatnam	Palace	Vegetation removed . . .	30	10 0 0	Work completed
59	Kurnool ..	Kurnool	Kurnool .	Tomb of Abdul Wahab khan	Removal of vegetation and rubbish from the arch openings, fixing a notice board and rendering the premises tidy, etc (Special repairs)	115	115 0 0	Do
60	Cuddapah	Sidhout ..	Vontimitta	Vontimitta temple	Special repairs to east Gopuram	1,600	160 0 0	In progress
61	Do. ..	Cuddapah ..	Cuddapah . .	Syed Ahmed Saheb's Masjid	Special repairs . . .	660	10 0 0	Completed
62	Do	Do ..	Do	Nawab's towers	Do . . .	800	416 0 0	Do
63	Do	Pulampet	Adapur near Nandalur	Ruined shrine at the foot of the hill	Special repairs Removing the cactus and debris in front	85	39 0 0	In progress Rs required for completion of the work
64	Do .	Do ..	Do	Providing notice boards to ancient monuments	Special repairs . ..	270	252 0 0	Completed.
65	Do.	Jammalamadugu	Gandikota .. .	Old temple at Gandikota	Do	10,369	21 0 0	Sale proceeds of the scaffolding materials Rs. 15 required for completion of work. In progress
66	Chittoor .. .	Madanapalle	Sompalle	Sompalle temple	Terracing work (special repairs) .	,030	225 0 0	Work in progress Rs 706 required to complete the work.
					Fourth Circle.			
67	Coimbatore ..	Erode .. .	Sircar Periapalayam	Temple or the tank	Removing and repacking the walls which were out of plumb and cracked Renewing the leaky terrace in front (repairs, special)	500	501 8 5	Completed.
68	Do .	Do .. .	Vijyamangalam	Jain temple .	Renewing the cracked stone beam of Mandapa and annual repairs	75	10 15 5	Do
69	Do ..	Bhavāni .. .	Bhavāni ..	Sangamēsvara temple	Cracked beams were replaced and pillar supports provided Petty plastering to compound wall was also done (repairs special and annual)	1,160	293 2 6	Work in progress Expenditure to end of 1911-12 is Rs. 337-6-4. Rupees 750 was contributed by the Bhavāni Devastanam An expenditure of Rs 34'-12-8 was incurred to end of 1911-12 and the work is in progress.
70	Nilgiris	Coonoor . ..	Hulikkaldrug ..	Fort	Clearing bushes and cleaning compound (repairs annual)	30	25 12 0	Completed.
71	Do .. .	Do ..	Kotagiri . ..	Batlāda Achēri Dolmens	Cutting and clearing bushes and repairing compound wall (repairs, annual)	20	16 10 2	Do

Statement of expenditure on Conservation work carried out during the year 1912–13—*cont.*

Item number.	District.	Taluk.	Place.	Name of monument.	Description of repairs done.	Amount of estimate	Actual expenditure.	Remarks.
					Fourth Circle—cont.	Rs.	Rs. A. P.	
72	Nilgiris	Ootacamund ..	Melkundah ..	Sculptured Dolmens.	Jungle clearance (repairs, annual).. ..	5	5 0 0	Completed.
73	Salem	Tiruchengode ..	Sankaridrug ..	Fort and temple on the Hill.	Ordinary maintenance	500	11 2 7	The amount represents the balance due to the contractor. No work was done in 1912–13.
74	Do.	Salem	Tārāmangalam ..	Siva temple	Special repairs. One of the massive gates has been secured with iron straps and clamps	980	794 8 0	Completed except drainage. Amount required to complete the work is Rs. 100. Contribution received is Rs. 163-5-4.
75	Trichinopoly ..	Namakal ..	Namakal	The whole Hill and buildings on it.	Ordinary repairs and patch repairs to Fort walls and clearing vegetation.	340	333 2 11	Completed.
76	Malabar	Kotayam ..	Tellicherry ..	Fort	Clearing vegetation and providing notice-boards. (Repairs, annual and special).	100	113 0 0	Do.
77	Do.	Wynaad ..	Sultan's Battery	Jain temple	Providing notice boards (repairs, special) ..	30	29 0 0	Do.
78	Do.	Palghat ..	Palghat	Fort	Removal of vegetation and pointing with coloured plaster (repairs, annual)	500	498 0 0	Do.
79	South Canara ..	Kasaragode ..	Bekal	Do.	Reconstruction of rampart walls collapsed *in places and removal of vegetation.* (annual repairs).	592	571 0 0	Do.
80	Do. ..	Mangalore ..	Mangalore . ..	Mangaladevi temple.	Re-roofing the Temple and renewing rotten roof timbers, etc., (special repairs).	1,570	1,554 0 0	Completed. A sum of Rs. 100 was contributed by the Temple Authorities.
					Fifth Circle.			
81	Madras	Madras ..	Madras .. .	Old Madras Town wall.	Ordinary repairs to the obelisk standing to the north of the Western extremity.	35	30 4 6	Work completed.
82	Chingleput ..	Chingleput ..	Mahabalipuram ..	The Seven Pagodas.	*Annual maintenance.*—A superintendent on Rs. 10 per mensem and a watchman on Rs. 5 per mensem were employed for the whole year. Pathways to all the monuments; and vegetation around the monuments was cut. Colour stains on Mahishasura cave had been removed. *Special Repairs*—Krishna Mandapa. Roofing was completely renewed afresh. Side walls and ceiling were pointed with cement. *Shore temple.*—Rubble wall was constructed above revetment with stones at site. Nandies that were lying here and there were placed on the enclosure wall. Casuarina trees were planted on the southern side. All stone images that were lying about were collected and placed at the foot of the walls.	275	158 14 11	In progress. Rs. 116 required to complete the work.

Statement of expenditure on Conservation work carried out during the year 1912-13—*cont.*

Item number.	District.	Taluk.	Place.	Name of monument.	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks.
				Fifth Circle—cont.		Rs.	Rs. A. P.	
82	Chingleput ..	Chingleput ..	Mahabalipuram ..	The Seven Pagodas	*Old Lighthouse or Iswara temple.*—Hand railings were provided for the incomplete portion on the top. A trap door was newly provided on top. The wooden railings for the stair-case were fitted up properly. *Arjuna's ratha.* Two new cutstone pillars were provided for the entrance and the basement was repaired.	1,400	1,302 15 7	Work completed.
83	Do. ..	Do. ..	Sadras	Old Dutch Fort ..	Removal of vegetation and repairs to the fort walls, and provision of a new gate was made.	690	675 3 0	Do.
84	Do. ..	Do. ..	Do.	Dutch cemetry ..	The walls were plastered on the inside in patches. A new door was provided for the entrance. A new padlock was supplied (special repairs).	50	47 12 3	Do.
85	Do. ..	Do. ..	Orakadam	Vadamalaswarar temple.	The temple was thoroughly repaired. Both the interior and exterior flooring and ceiling were pointed with specially prepared mortar (special repairs).	580	353 3 0	Do.
86	Do. ..	Do. ..	Chingleput ..	"Ther Mahal" ..	A new doorway was provided for the lower storey and special repairs to the building.	430	39 11 4	Do.
87	Do. ..	Madurantakam ..	Perumbair ..	Tandonisvara temple.	*Special repairs.* This is an incomplete work of last year. Gopuram was completely plastered with special mortar. New joists were inserted for the roof over the sanctum Walls in front of temple including parapet wall all round were dismantled and repacked. The interior and exterior of the temple was plastered with specially prepared mortar.	1 280	348 11 0	Work completed. The villagers have contributed Rs. 200.
88	Do. ..	Saidapet ..	Manimangalam ..	Old Siva temple with Aspidal gopuram	*Special repairs.* The wall on the south side of the temple was completely dismantled and reconstructed with the insertion of new bond stones.	800	493 14 5	Incomplete work for this year. A sum of Rs. 500 in addition to the amount of estimate is required as the gopuram is to be plastered.
89	Do. ..	Conjeeveram ..	Tenneri	Larger Siva temple ..	*Special repairs.* The wall on the northern and eastern sides was dismantled and reconstructed. Vegetation was completely removed	540	81 10 3	Incomplete work of last year's. Work completed. Another estimate for Rs. 252 is to be put in hand for execution.
90	Do. ..	Do. ..	Do. .. .	Lesser Siva temple ..	*Special repairs.* The thick vegetation on the temple was removed, but not rooted out, in order to see the state of the roof.	1,300	6 1 1	No repairs were carried out.

Statement of expenditure on Conservation work carried out during the year 1912–13—*cont.*

Item number.	District.	Taluk.	Place	Name of monument.	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks
				Fifth Circle—cont.		Rs.	Rs A. P.	
91	Chingleput ..	Chingleput ..	Sālavānkuppam ..	Caves and rock ..	(Repairs, special). The nature of the work done has not been stated by the Public Works department.)	70	3 3 7	Work completed.
92	Nellore	Udayagiri ..	Udayagiri	Hill fort	Repairing granery and clearing site of rubbish. Repairs to steps.	350	311 2 0	A sum of Rs. 48-4-2 was incurred in 1911–12. The work has been completed.
93	Do	Atmakūr ..	Anamasamudram-peta.	Fakir's tomb	Providing for notice boards, cost, cartage and labour for fixing inclusive.	158	17 15 3	
94	Do. . ..	Udayagiri ..	Udayagiri . ..	Ranganāyakulu temple.	Do.	..	18 14 2	
95	Do.	Do. ..	Do.	Dasarapalli cave ..	Do.	..	20 3 8	
96	Do	Rapur .. .	Rapur	Old fort	Do.	..	12 4 0	
97	Do. .. .	Nellore	Nellore	Do.	Do.	..	12 4 0	
98	Do.	Darsi	Kochulakota ..	Do.	Do.	..	20 0 0	
99	Do.	Kanigiri ..	Kanigiri	Hill fort	Do.	..	20 0 0	
				Sixth Circle.				
100	Rāmnād	Srivilliputtūr ..	Srivilliputtūr ..	Tirumal Naik's Palace.	Notice board has been provided for in the building.	15	15 4 6	Completed.
101	Tinnvelly ..	Tiruchendur ..	Ālwar Tirunagari	Vishnu temple ..	Inscriptions cleaned and painted, cement pointing also done. Ordinary repairs.	380	157 1 10	Further work stopped as per order of the Executive Engineer and work closed. Contribution received, Rs 300.
102	Do. .	Srivaikuntam ..	Agaram	Do. ..	Inscriptions in the temple were cleaned	80	76 4 5	Completed.
103	Do. ..	Do. ..	Adichanallur ..	Prehistoric Remains.	The remains were watched by a man under the control of the Revenue Department.	72	82 8 0	Do.
104	Do. ..	Do. ..	Tuticorin	Dutch cemetery ..	Inscriptions were cleaned and whitewashing done. Ordinary repairs.	75	71 8 4	Do.
105	Travancore State.	Quilon	Anjengo	Old Dutch cemetery.	Removal of earth mounds and other debris from inside the fort. Rebuilding the damaged portion of musketry walls and painting and removal of vegetation from the masonry walls.	560	499 15 2	In progress. Rs. 60 is required for the current year 1913–14.
106	Madura	Madura	Alagarkovil ..	Panchapandava beds in Alagarmalai hills.	Forming easy access to the place (ordinary repairs).	300	210 0 0	Work is in progress and will be completed with the balance of the estimate amount available, viz., Rs. 90 in 1913–14.
107	Do.	Do. ..	Dindigul	Rock fort	Watchman for watching the rock fort buildings during 1912–13 (annual repairs).	90	87 0 0	Work completed.
108	Do.	Palni	Palni	Idumbamalı hills .	Repairs to and refixing notice boards round (special repairs).	23	19 0 0	Do.

Statement of expenditure on Conservation work carried out during the year 1912–13—*cont.*

Item number.	District.	Taluk.	Place.	Name of monument.	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks.
				Sixth Circle—cont.		Rs	Rs. A P.	
109	Madura	Tirumangalam ..	Koilpatti	Temple	Maintaining a sweeper to look after the temple and keep it clean during 1912–13 (Annual repairs).	7	11 0 0	This expenditure is charged to the annual maintenance of estimate. The excess is due to the grant of increased pay in lieu of grain compensation allowance.
110	Do.	....	....	Protected monuments and those which are Government property.	Providing notice boards	170	152 0 0	The work has been completed. An expenditure of Rs. 13-4-0 having been adjusted in the accounts of April 1913.
111	Trichinopoly ..	Trichinopoly ..	Tiruvēdungulam ..	Isvaran kovil ..	Leaky roof and floor were repaired and a broken lintel was supported.	650	327 11 5	Expenditure up to end of March 1912 Rs. 265-5-7. Completed.
112	Do. ..	Do ..	Tiruvellarai .	Jambunatha temple ..	The front porch originally demolished by us for reading inscriptions is now rebuilt supported on a platform of cutstone work. Petty repairs to adjacent structure also completed. (*Repairs special*).	940	506 9 5	Expenditure up to end of March 1912 is Rs. 305-6-1. Completed.
113	Do. ..	Do. ..	Do. .	Pundarikaksha perumal temple.	Leaky roof of Chitraiyagamandapa, Madappalle and Naminalwarmandapa are repaired, and jungle cleared.	2,130	696 12 5	The trustees have promised Rs. 200 but not yet paid to Public Works Department The Collector has been asked to recover the amount in No 56, dated 3rd January 1913 and is reminded. Rs. 1,200 may be given as grant for 1913–14.
114	Do. ..	Do. ..	Trichinopoly ..	Preston's battery ..	Vegetation was cleared and a notice board prepared.	830	137 2 7	Completed.
115	Do. ..	Do. ..	Alambakkam ..	Varadaraja perumal temple.	Leaky roof partly repaired	100	64 13 9	Rs. 40 may be given as grant.
116	Do. ..	Kulittalai ..	Sivayam	Ratnēsvara temple on Rock	Roof repairs. Ordinary repairs	450	53 4 6	Rs. 10 do. do.
117	Do. ..	Do. ..	Vaigayanallur ..	Sundakkaparai .	Providing a notice board	10	6 3 0	Rs. 10 may be given. In progress.
118	Do. ..	Perambalur ..	Valikondapuram ..	Temple, tank and mandapa.	Roof of mandapa east of tank completely repaired. Floor more than half completed. Repairs to roof of main temple. Completed	4,620	1,179 15 11	The temple is poor and pays no contribution. Rs. 1,130 grant may be given.
119	Do. ..	Do. ..	Do. ..	Musjids . ..	Roof and floor repaired and vegetation cleared.	780	297 0 10	Completed.

Statement of expenditure on Conservation work carried out during the year 1912-13—*cont.*

Item number.	District.	Taluk.	Place.	Name of monument.	Description of repairs done.	Amount of estimate.	Actual expenditure.	Remarks.
				Sixth Circle—cont.				
120	Trichinopoly ..	Udaiyarpalaiyam.	Gangaikondashōla-puram	Brihadisvara temple.	Vegetation cleared on half the northern, whole of west side and half of south side of Vimana. The Lion well is cleared of rubbish and masonary repaired and plastered. (Special repairs).	Rs. 7,000 Revised originally. Rs. 1,160	Rs. A. P. 1,117 7 6	Rs. 1,500 may be given as grant. (Rs. 500 allotted in G.O. No. 297 W., dated 2nd April 1913, since received).
121	Do. ..	Do.	Kāmarasavalli ..	Siva temple	Compound cleared of debris and vegetation and stones stacked. The roof was leaky and this has been repaired. Special repairs.	1,000	1,001 12 3	Another Rs. 1,000 may be given as grant for 1913—14. The trustee has paid Rs. 100 into Public Works Department. He will pay another Rs. 100 in 1913—14. (Rs. 500 allotted in G.O. No. 657 W., dated 2nd April 1913).
				Seventh Circle.				
122	North Arcot ..	Walajah ..	Arcot	Delhi Gate	Watchman for 12 months (Annual).. ..	60	54 0 0	Work completed.
123	Do. ..	Do. ..	Do.	Do.	Union tax for 1912-13 (Annual)	4	4 0 0	Do.
124	Do. ..	Vellore	Vellore	Hindu temple ..	Removing vegetation, petty repairs and watchman's wages (Annual repairs).	300	246 6 8	Do.
125	Do. ..	Do.	Do.	Fort	Removing vegetation (Annual repairs) ..	400	412 6 7	Do.
126	Do. ..	Do.	Do.	Do.	Reopening the outlet shrine (Special repairs).	515	513 10 6	Do.
127	Do. ..	Chendragiri ..	Chendragiri ..	Mahal	Clearing vegetation, petty repairs and watchman's wages. (Annual repairs).	300	329 7 0	Do.
128	Do. ..	Polur	Tirumalai	Jain temple	Reconstructing compound wall and fixing iron grated door, etc. (Special repairs).	400	210 13 6	Work in progress. The balance of estimate, *i.e.*, Rs. 189 is required for expenditure during 1913—14 to complete the work.
129	North Arcot ..	Walajah ..	Pudupadi	Baradwajiswara temple.	Petty repairs (repairs special)	80	75 15 5	Completed.
130	Do. ..	Do. ..	Ukkal	Vishnu temple ..	Removing and replacing cut stone facing (repairs special).	175	171 13 5	Do.
131	Do. ..	Vellore	Vellore	Fort	Providing iron railings with doorway to the western side gateway leading to down rampart (special repairs).	490	98 10 7	Completed. Outlay of Rs. 366-14-0 was incurred to end of 1911-12.
132	Chittoor	Punganoor ..	Punganoor.. ..	Inscriptions at Mimkibanda.	Chiselling the drain round the inscriptions (special repairs).	20	19 14 0	Completed.
133	South Arcot ..	Gingee	Gingee	Fort	Repacking old stone rampart walls (repairs special).	10,800	996 0 0	In progress. Rs. 9,800 required to complete the work. Rs. 2,000 required for 1913-14

Item number.	District.	Taluk.	Place	Name of monument.	Description of repairs done	Amount of estimate.	Actual expenditure.	Remarks.
				Seventh Circle—cont.		Rs.	Rs. A. P.	
134	South Arcot .	Gingee	Gingee	Fort	Watching the fort, cutting bushes from the building and cleaning pathways. (Annual repairs.)	150	140 0 0	Completed.
135	Do. ..	Cuddalore ..	Devanampatnam ..	Fort St David .	Earthwork for opening out old wall (Special repairs.)	200	204 0 0	Do.
136	Tanjore .	Mayavaram .	Tranquebar .	Dansborg and Inner Fort.	Cement washing to walls wherever necessary. (Special repairs)	5,500	264 3 0	Do.
137	Do . ..	Kumbakonam ..	Kumbakonam ..	Banapurisvara temple.	Rear mandapa has been completely repaired and flooring done to the mandapa in front of god's shrine (Repairs, special.)	1,900	907 7 1	In progress. Contribution of Rs. 200 was realised from the trustees, of which Rs. 7 was only spent. The balance is enough to complete the repairs, outlay to end of 1911–12 being Rs. 592.
138	Do ..	Do .	Do .	Nagesvara temple ..	Repairs to the mandapams all round the god's shrine and the floor have been carried out. (Special repairs.)	2,200	1,212 5 3	In progress. Contribution amount collected Rs. 540. The remaining work will be carried out from the balance of contribution.
139	Do ..	Do ..	Do. .	Sarangapani temple .	All the floors of the front tower have been renewed with teak joists and planks and painting done to them (Special repairs)	6,400	2,912 7 5	In progress. Contribution realised is Rs. 3,200 Balance of contribution remaining is Rs. 470. The remaining work will be carried out from this amount.
140	Do .	Tanjore	Tanjore .. .	Sivaganga Little Fort (*a*) Repairing rampart wall and bastion No. 10.	(*a*) (Special repairs) Underpinning to rampart wall done in the south and north sides and bastion No. 10 rebuilt completely.	1,020	1,531 3 0	Completed.
141	Do. .	Do .	Do	(*b*) Constructing a compound wall and fencing the bastion	(*b*) (Special repairs). Iron gates have been fixed to prevent trespass.	480	50 10 9	Do.
142	Do	Do .. .	Do.	(*c*) Maintaining the fort	(*c*) (Annual repairs) Vegetation was removed and watchmen's wages paid.	150	150 7 2	Do.
143	Do	Do . .	Do .. .	Tanjore Palace Arsenal tower.	(Special repairs.) Masonry walls to prevent further extension of cracks partly done in the ground floor of the arsenal	2,010	1,000 13 5	In progress. A further sum of Rs. 1,000 is required for expenditure for 1913–14.
144	Do .	Negapatam	Negapatam ..	Dutch cemetery ..	(Special repairs) Rebuilding and restoring the plastering in certain portions of the compound wall and colour washing.	400	399 8 9	Completed.
145	Do .	Arantangi .	Arantangi . ..	Fort	(Special repairs) Providing a notice board in front of the fort.	25	25 0 0	Do.
					Total .		36,929 3 2	

APPENDIX E (2).

STATEMENT of expenditure on Conservation work carried out in Coorg during 1912–13.

Item number.	District.	Taluk.	Place.	Name of monument	Description of repairs done.	Amount of estimate	Actual expenditure.	Remarks
						Rs.	Rs. A. P.	
1	Coorg	Mercara	Mercara	Fort	Clearing rank vegetation, and repairing the approach road, drains and culverts. Painting the horses and masonry elephants	270	267 2 1	Annual repairs.
2	Do. .. .	Do. .. .	Do .. .	Raja's seat .. .	Replacing battens and tiles to the roof. Repairing cracks in the arch, plastering walls with cement, repairing steps, floors and corners of the seat with brick in lime.	..	..	....
3	Do	Do	Do. ..	Do .. .	Repairs to floor and basement, leaks in roof and plaster, etc.	240	18 2 7	Special repairs. The expenditure up to end of last year was Rs. 217-8-5. The work has been completed.
4	Do ..	Padinalknad ..	Nalknad	Palace ..	Whitewashing repairs to doors, windows and roofs. Repairs to stables, furniture and approach road. Clearing compound of vegetation	210	212 8 1	Annual repairs.
					Total ..	..	497 12 9	